7-F EELGRASS SURVEY RESULTS FOR THE BRIGHTWATER MARINE OUTFALL ALTERNATIVES

FINAL ENVIRONMENTAL IMPACT STATEMENT

Brightwater Regional Wastewater Treatment System

APPENDICES



Final

Appendix 7-F Eelgrass Survey Results for the Brightwater Marine Outfall Alternatives

September 2003

Prepared for King County by Parametrix, Inc. Kirkland. WA

and

King County Dept. of Natural Resources and Parks Seattle, WA

For more information:
Brightwater Project
201 South Jackson Street, Suite 503
Seattle, WA 98104-3855
206-684-6799 or toll free 1-888-707-8571

Alternative formats available upon request by calling 206-684-1280 or 711 (TTY)



Table of Contents

1.	INTRODUCTION	1
	1.1. Survey Purpose	1
	1.2. Site Description	2
2.	SURVEY METHODS	3
3.	RESULTS	5
	3.1. Zone 7S Richmond Beach 3.1.1. Substrate Characteristics 3.1.2. Eelgrass Distribution 3.1.3. Macroalgae 3.1.4. Organisms 3.2. Zone 6 3.2.1. Substrate Characteristics 3.2.2. Eelgrass Distribution 3.2.3. Macroalgae 3.2.4. Organisms	
	3.3. Zone 7SPoint Wells Preferred Alignment. 3.3.1. Substrate Characterization. 3.3.2. Eelgrass Distribution. 3.3.3. Macroalgae. 3.3.4. Organisms.	17 17 17 19
4.	CONCLUSIONS	21
5.	REFERENCES	23
Δι	nnendices	

Appendix A Richmond Beach Eelgrass Survey Datasheets

Appendix B Zone 6 Eelgrass Survey Datasheets

Appendix C Point Wells Eelgrass Survey Datasheets

List of Figures

Outfall Siting Area
Eelgrass Survey Transects Outfall Zone 6
Eelgrass Survey Transects Zone 7S, Point Wells
Eelgrass Survey Transects Zone 7S, Richmond Beach
Quadrat Locations at Permanent Markers
Apparatus for Locating Quadrats at Permanent Markers
Outfall Zone 7S - Richmond Beach - Mean Eelgrass Density
Outfall Zone 6 – Mean Eelgrass Density
Outfall Zone 7S – Point Wells – Mean Eelgrass Density
bles

List

Table 1	Richmond Beach Zone 7S Eelgrass Distribution	6
Table 2	Richmond Beach Zone 7S Macroalgae Distribution	10
Table 3	Zone 6 Eelgrass Distribution	13
Table 4	Zone 6 Macroalgae Distribution	15
Table 5	Zone 7S — Point Wells Eelgrass Distribution	18
Table 6	Zone 7S — Point Wells Alignment Macroalgae Distribution	20
Table 7	Summary of Eelgrass Distribution at Brightwater Marine Outfall Alternatives and Amount of Eelgrass that Would be Disturbed During Construction of a 25-foot W Sheeted Trench	ide

1. INTRODUCTION

King County has prepared a Draft Environmental Impact Statement (Draft EIS) and Final Environmental Impact Statement (Final EIS) on the Brightwater Regional Wastewater Treatment System. The Final EIS is intended to provide decision-makers, regulatory agencies and the public with information regarding the probable significant adverse impacts of the Brightwater proposal and identify alternatives and reasonable mitigation measures.

King County Executive Ron Sims has identified a preferred alternative, which is outlined in the Final EIS. This preferred alternative is for public information only, and is not intended in any way to prejudge the County's final decision, which will be made following the issuance of the Final EIS with accompanying technical appendices, comments on the Draft EIS and responses from King County, and additional supporting information. After issuance of the Final EIS, the King County Executive will select final locations for a treatment plant, marine outfall and associated conveyances.

The County Executive authorized the preparation of a set of Technical Reports, in support of the Final EIS. These reports represent a substantial volume of additional investigation on the identified Brightwater alternatives, as appropriate, to identify probable significant adverse environmental impacts as required by the State Environmental Policy Act (SEPA). The collection of pertinent information and evaluation of impacts and mitigation measures on the Brightwater proposal is an ongoing process. The Final EIS incorporates this updated information and additional analysis of the probable significant adverse environmental impacts of the Brightwater alternatives, along with identification of reasonable mitigation measures. Additional evaluation will continue as part of meeting federal, state and local permitting requirements.

Thus, the readers of this Technical Report should take into account the preliminary nature of the data contained herein, as well as the fact that new information relating to Brightwater may become available as the permit process gets underway. It is released at this time as part of King County's commitment to share information with the public as it is being developed.

1.1. SURVEY PURPOSE

As part of the siting process for a proposed marine outfall for the Brightwater Treatment Plant, King County Department of Natural Resources and Parks documented the distribution and abundance of eelgrass and macroalgae along the Puget Sound shoreline from approximately Mukilteo south to Shilshole Marina (Woodruff et al., 2001). The original survey was conducted in 1999 with hydroacoustic and video equipment towed from a boat. That survey included the two candidate outfall zones (Zones 6 and 7S). A small area surrounding the Chevron barge dock at Point Wells in Zone 7S, the area immediately south of the former Unocal pier in Zone 6, and the area north of the former Unocal pier to the Port of Edmonds' marina in Zone 6 were not surveyed due to difficulties in maneuvering the boat and towed equipment near dock structures. Since these areas are in close proximity to the alternative outfall alignments evaluated in the Final EIS, it was important to document eelgrass habitat in the area. This document presents results from a quantitative eelgrass survey conducted by SCUBA divers between July 23 and August 18, 2003 that fills the data gaps from the previous survey, and provides information for the Final EIS about eelgrass abundance and distribution along the proposed outfall alignments in the two candidate zones. Diver surveys were conducted to provide comparable data for all proposed outfall alignments utilizing the same survey technique.

1.2. SITE DESCRIPTION

Zone 6 is located offshore of Edwards Point and extends approximately 7,500 feet (ft) west from the shoreline to water depths of approximately 600 ft (Figure 1). There is a marine sanctuary at the north end of the zone and a major structure (the former Unocal pier) extending from the shoreline to approximately -50 ft mean lower low water (MLLW). The proposed outfall alignment in this zone begins at the effluent pump station at the proposed treatment plant, extends west to the shoreline, then continues west into Puget Sound north of the pier. The outfall would extend from the shoreline to a depth of approximately 600 ft below MLLW.

Zone 7S is located offshore of Point Wells and extends approximately 7,500 ft west from the shoreline to water depths of approximately 700 ft (see Figure 1). The preferred alignment begins at Portal 19 on the southern edge of the Chevron Point Wells facility, extends on land to the tip of Point Wells, and then continues west into Puget Sound. The outfall would extend from the shoreline to a depth of approximately 600 ft below MLLW. For comparative purposes, a second alignment in Zone 7S was also surveyed for eelgrass distribution and abundance. This second alignment leaves shore at the Richmond Beach area and extends west into Puget Sound.

2. SURVEY METHODS

The eelgrass survey was conducted according to Washington Department of Fish and Wildlife (WDFW) guidelines for intensive eelgrass/macroalgae surveys (WDFW, 1999). A brief description of the methods is provided below and a more detailed description may be found in the *Eelgrass Monitoring Survey Plan for the Brightwater Marine Outfall Alternatives* (King County, 2003). The Zone 6 and Zone 7S Point Wells alignment surveys were conducted along thirteen transects placed perpendicular to shore (Figures 2 and 3). These transects were placed along the proposed outfall alignment and parallel to the alignment at 10, 20, 30, 55, 80 and 105 ft on both sides

Only three transects were surveyed for the Richmond Beach alignment in Zone 7S (Figure 4). These transects were placed along the potential outfall alignment and parallel to the alignment at 20 ft on both sides. This potential alignment was surveyed in order to obtain comparable data with the preferred alignment and to provide data for comparison to the previously collected hydroacoustic and video survey data.

Each transect was initiated from digital global positioning system (DGPS) coordinate points located at the shoreward end of the proposed outfall alignment between + 0.5 to +15 ft MLLW. The elevation of the shoreward end of the transect was based on the availability of contour data. The shoreward end of a line marking each transect was fixed at the shoreline and extended west from the shoreline following predetermined compass headings. Data were collected at 20 ft intervals along each transect. The offshore end of each transect was marked with a buoy to aid in the placement of adjacent transects. The compass bearing of each transect from the starting point was noted on the field data sheet. The starting and ending point of all survey transects encompassed the entire eelgrass beds in the survey area.

Divers recorded the following information for each transect; qualitative substrate type, eelgrass turion (shoot) counts using a 0.25 m² quadrat placed at the 2, 6, and 10 o'clock positions for each survey position, and visually estimating percent cover of macroalgae using a 0.25 m² quadrat placed at the 2, 6, and 10 o'clock positions at each survey position. Data from the three quadrats at each survey position were averaged to obtain mean densities. Additional information was also collected, including time and depth at each survey position and presence of easily observed invertebrate and vertebrate species. Fish and macroinvertebrates seen while conducting the eelgrass survey were noted. The intent was to document easily observed invertebrates and vertebrates, not to perform a benthic analysis or search for organisms beneath rocks. Species easily observed in the survey areas included fish, sea stars, crabs and, in intertidal areas, clams as evidenced by squirts or siphon holes.

In intertidal areas for all zones, data was collected during low tide. For Zone 6 transects, data between the 100 to 200 ft distance along the transects were collected by divers after the tide was sufficiently high to perform a dive. Data from 220 to 380 ft distance along the transects were collected visually from the vessel. This area consisted of a sand bar and the entire area was walked at low tide. No eelgrass or macroalgae was observed,

therefore, no diver transects were performed in this area. Data between the 400 to 560 ft distance along the transects were collected by divers.

In Zone 7S along the preferred alignment, data between the 0 to 200 ft distance along the transects were collected intertidally. From 220 ft to the end of the transects, data were collected by divers.

Survey positions along the preferred alignment in Zone 7S, and at the 10, 55, and 105 ft transects on either side of the preferred alignment transect were permanently marked in the field with 2-foot PVC stakes driven 1.5 ft into the substrate to allow for repeatable surveys. Repeat surveys at permanent markers can be problematic as plant debris can become caught on the marker and dragged along the bottom, scouring a circular area of up to a meter in radius. Therefore, at the permanently marked stations, quadrats were placed slightly differently to avoid the area that is vulnerable to future scouring (Figure 5). As shown in Figure 5, a one-meter extension pole was attached to a proximal corner of the quadrat, so the three survey observations could be collected outside a one-meter arc around the permanent marker. A photograph of the apparatus is presented in Figure 6. When viewed from above, the extension pole was attached to the right proximal corner of the quadrat. The base of the extension pole was fitted with a flat plate with a hole that fit over the survey stake. The plate was marked in such a way to allow alignment of the quadrat in the three positions indicated on Figure 5. The quadrat that was placed one meter down the transect from the survey position (i.e., one meter in the offshore direction) was designated the 2 o'clock position. The quadrat 120 degrees clockwise around the arc (viewed from above) from the 2 o'clock position was designated the 6 o'clock position, and the quadrat 240 degrees clockwise around the arc (viewed from above) from the 2 o'clock position was designated the 10 o'clock position. These three positions still represent replicates of the survey position, but are protected from future scouring around the marker.

Quadrats at survey positions lacking a permanent marker were placed at the conventional 2, 6, and 10 o'clock positions adjacent to the survey position (the 6 o'clock quadrat being on the onshore side of the survey position, centered on the transect). A compass was used to align the quadrats with the transects.

3. RESULTS

3.1. ZONE 7S-- RICHMOND BEACH

The Richmond Beach alignment was surveyed on July 23, 2003. The survey was performed by placing a base transect line along the alignment from approximately +0.5 ft to –20 ft MLLW. The transect line was marked with flags at 20 ft intervals along the line. The transect starting coordinates were supplied by King County and were located on the beach using Trimble DGPS equipment. The starting location was approximately 100 ft seaward of riprap located at +0.5 ft MLLW. An anchor was placed at this location and the attached transect line was deployed off the bow of a vessel as it motored offshore along the outfall alignment. Vessel movement was tracked on the screen of the DGPS along the preloaded alignment to ensure that the transect was placed accurately along the alignment. At the offshore position, the end of the transect line, with weights attached, was lowered to the bottom and marked with a float. Additional weights with floats were placed along the alignment at 200 ft intervals to help hold the line in position for the survey crew during deployment.

Data were collected along the central baseline transect and along additional transects parallel to the base transect at 20 ft intervals in both directions. Data were collected at 20 ft increments along the length of all three transects. A compass and tape measure were used to locate the survey positions off of the central baseline transect. At each survey position, quadrat counts were made at the 2, 6, and 10 o'clock positions. Time and depth (based on the divers depth gauge) were recorded for each position so that tidal corrections could be calculated.

3.1.1. Substrate Characteristics

The seafloor slope is gradual extending seaward from +0.5 ft MLLW. The substrate along the transects from +0.5 ft MLLW seaward consists almost entirely of sand, with visual observations ranging from 90-100% sand. A few small patches of gravel and cobble substrate were observed throughout the survey; however, the majority of the survey area consists of sand. The lower intertidal area gradually slopes to approximately -10 ft MLLW at approximately 1,200 ft offshore. The survey did not continue seaward beyond -10 ft MLLW, as additional vegetation was not present.

3.1.2. Eelgrass Distribution

Eelgrass data for the Richmond Beach alignment and parallel transects are presented in Table 1 and Figure 7. Eelgrass was first observed at the 60 ft distance along the transects (+0.4 ft MLLW) and eelgrass terminated at 1240 ft (-9.8 ft MLLW).

Table 1. Richmond Beach-- Zone 7S Eelgrass Distribution

		Averag	je Density (sho	ots/m²)
			Transect #	·
Distance Along Transect (ft)	Depth (MLLW) ^a	20 ft N	Outfall Alignment (0)	20 ft S
0	+0.5	0	0	0
20	+0.5	0	0	0
40	+0.5	0	0	0
60	+0.4	48	0	4
80	-0.6	8	8	0
100	-0.9	0	8	0
120	-1.0	20	0	0
140	-1.0	40	0	0
160	-1.1	52	0	0
180	-1.2	12	12	36
200	-0.2	0	0	0
220	-0.2	0	12	80
240	+0.1	12	60	60
260	+0.1	0	52	20
280	+0.1	0	0	0
300	+0.2	0	0	0
320	+0.3	16	12	0
340	+0.3	0	0	0
360	+0.4	0	0	0
380	+0.4	0	0	20
400	-1.6	4	12	20
420	-1.9	24	12	36
440	-1.9	0	0	20
460	-2.2	0	0	0
480	-2.2	48	0	0
500	-1.5	0	0	0
520	-1.5	12	0	0
540	-1.5	0	0	0
560	-1.8	0	0	0
580	-1.8	0	0	0
600	-1.8	12	0	0
620	-2.8	0	8	20
640 660 680 700	-2.5 -2.2 -2.2 -2.2	0 0 0 0	44 0 0 20	0 0 0 0

Table 1. Richmond Beach-- Zone 7S Eelgrass Distribution (continued)

		Averag	e Density (sho	ots/m²)
			Transect #	,
Distance Along Transect (ft)	Depth (MLLW) ^a	20 ft N	Outfall Alignment (0)	20 ft S
720	-2.2	0	0	8
740	-1.9	0	0	0
760	-1.9	0	0	0
780	-1.9	0	0	0
800	-2.9	0	0	0
820	-3.4	0	0	0
840	-3.1	28	8	0
860	-3.6	8	12	20
880	-4.1	0	35	17
900	-3.7	0	21	16
920	-3.5	0	0	0
940	-3.5	0	15	19
960	-5.8	6	0	0
980	-5.8	9	17	0
1000	-5.8	16	2	8
1020	-6.4	15	13	15
1040	-6.1	0	0	0
1060	-6.1	0	0	0
1080	-6.9	0	0	0
1100	-4.7	0	0	0
1120	-4.7	0	0	0
1140	-5.5	14	0	19
1160	-6.3	10	18	8
1180	-5.9	3	9	9
1200	-6	38	3	22
1220	-9	10	10	15
1240	-9.8	0	0	0
1260	-10.8	0	0	0
1280	-12.5	0	0	0

^a depths are for transect #(0)

Shaded cells denote monitoring stations where eelgrass was present.

In general, the eelgrass was patchy in distribution above -2.9 ft MLLW with narrow bands of eelgrass running parallel to the shoreline. These bands covered two to four consecutive quadrat stations (i.e., they were 40-80 ft wide perpendicular to the shoreline) and were interspersed with areas devoid of eelgrass. Eelgrass density within the patches averaged 24 shoots/m² (standard deviation (sd) = 19 shoots/m²). For all three transects surveyed, eelgrass density was 14 shoots/m² (sd = 26 shoots/m²) within the quadrats, including quadrats with no eelgrass.

Below -3.4 ft MLLW, approximately at a distance of 840 ft along the transects, eelgrass occurred in wider (up to 100 ft) and denser beds. Average patch density in this region was 58 shoots/m² (sd = 32 shoots/m²).

3.1.3. Macroalgae

Two species of macroalgae were observed in abundance in the survey area, *Ulva* sp. and *Smithora naiadum*. The green alga, *Ulva* sp. was commonly observed from 0 to 420 ft along the distance of the transects (approximately +0.5 to -1.9 MLLW) either free-floating within the eelgrass beds or attached to shell debris. Percent cover of *Ulva* sp. ranged from 0-25%. Below -1.5 ft MLLW, *Ulva* sp. was present but less abundant (coverage 0-5%) (Table 2). *S. naiadum* is primarily an epiphytic species found on fronds of eelgrass in Puget Sound and percent cover for this species was not estimated. *S. naiadum* associated with eelgrass was observed in the survey area from approximately -2 ft to -9 ft MLLW. Kelp was not observed in the survey area.

3.1.4. Organisms

Few invertebrates or fish were observed in the survey area. In the shallower areas (+0.5 to -0.2 ft MLLW), anemones (*Anthopleura xanthrogrammica*) were observed. No clam siphons were observed within the quadrats. Rock crabs (*Cancer productus*) and juvenile speckled sanddabs (*Citharichthys stigmaeus*) were the only other animals observed in the survey area and were generally observed below -3.0 ft MLLW.

3.2. **ZONE** 6

The Zone 6 alignment was surveyed on July 24, 2003. The survey was performed by placing a transect line along the alignment from approximately the ± 2.0 ft MLLW to ± 2.0 ft MLLW. The transect was placed as described for Richmond beach. The transect line was marked with flags at 20 ft intervals along the line.

Although only one physical transect line was placed using DGPS coordinates, 13 parallel transects were surveyed. Data were collected along the central baseline transect and along additional transects placed at 10, 20, 30, 55, 80, and 105 ft on both sides of the base transect. Survey positions along the side transects were located by using a compass and tape measure attached to each 20 ft mark along the central transect. At each survey position, three quadrat counts were made at the 2, 6, and 10 o'clock positions. Transect positions from the landward end to the 200 ft mark (-1.0 ft MLLW) were surveyed during an ebb tide. Transect positions from 200 ft seaward to 560 ft (-6.0 ft MLLW) were surveyed on a flood tide. Time and depth were recorded for each position so that tidal

corrections could be calculated. The survey stopped at the -6.0 ft MLLW, as eelgrass and other macroalgae were not present beyond this depth.

Table 2. Richmond Beach-- Zone 7S Macroalgae Distribution

		Ave	erage Density (% Cov	/er)
			Transect #	
Distance Along Transect (ft)	Depth (MLLW) ^a	20 ft S	Outfall Alignment (0)	20 ft N
0	+0.5	2	0	3
20	+0.5	0	0	0
40	+0.5	2	2	0
60	+0.4	2	2	5
80	-0.6	0	2	2
100	-0.9	2	3	0
120	-1.0	0	0	2
140	-1.0	5	0	2
160	-1.1	0	0	10
180	-1.2	3	3	2
200	-0.2	0	0	0
220	-0.2	20	3	0
240	+0.1	15	15	3
260	+0.1	7	8	0
280	+0.1	3	0	0
300	+0.2	0	0	0
320	+0.3	2	2	3
340	+0.3	0	0	0
360	+0.4	0	0	2
380	+0.4	3	0	0
400	-1.6	15	0	0
420	-1.9	3	6	3
440	-1.9	0	0	0
460	-2.2	0	0	0
480	-2.2	0	0	0
500	-1.5	0	0	0
520	-1.5	0	0	0
540	-1.5	0	0	0
560	-1.8	0	0	0
580	-1.8	0	0	0
600	-1.8	0	0	0
620	-2.8	0	2	0
640	-2.5	0	0	0
660	-2.2	2	0	2

		Ave	erage Density (% Co	ver)
			Transect #	
Distance Along Transect (ft)	Depth (MLLW) ^a	20 ft S	Outfall Alignment (0)	20 ft N
680	-2.2	0	0	0
700	-2.2	0	0	0
720	-2.2	0	0	0
740	-1.9	0	0	0
760	-1.9	0	0	0
780	-1.9	0	0	0
800	-2.9	0	0	0
820	-3.4	0	0	0
840	-3.1	0	0	0
860	-3.6	0	0	0
880	-4.1	0	0	0
900	-3.7	0	0	10
920	-3.5	10	10	10
940	-3.5	0	0	10
960	-5.8	10	10	0
980	-5.8	10	0	0
1000	-5.8	0	0	0
1020	-6.4	0	0	0
1040	-6.1	0	0	0
1060	-6.1	0	0	0
1080	-6.9	0	0	0
1100	-4.7	0	0	0
1120	-4.7	0	0	0
1140	-5.5	0	0	0
1160	-6.3	0	0	0
1180	-5.9	0	0	0
1200	-6	25	0	25
1220	-9	20	22	27
1240	-9.8	2	0	0
1260	-10.8	0	0	0
1280	-12.5	0	0	0

^a depths are for transect #(0)

Note: Macroalgae includes all algal species, excluding eelgrass

Shaded cells denote monitoring stations where macroalgae was present.

3.2.1. Substrate Characteristics

From +2.0 to +1.0 ft MLLW the substrate north of the proposed alignment consists primarily of gravel (90-100%). Occasional small boulders were also observed. South of the proposed alignment the substrate consists of sand (10-80%) and gravel (25-80%). Below +1.0 ft MLLW the substrate transitions to predominately sand with coverage below +0.3 ft MLLW 100% sand.

3.2.2. Eelgrass Distribution

Eelgrass data for the Zone 6 alignment and parallel transects are presented in Table 3 and Figure 8. Eelgrass distribution in Zone 6 was characterized by a relatively wide bed beginning at the 60 ft mark along the transects (approximately +1.75 ft MLLW) and terminating at the 180 ft distance along the transects (approximately +1.2 ft MLLW). The bed width varied but generally ranged from 40 to 140 ft wide (perpendicular to shore) and ran the entire breadth of the survey area (210 feet parallel to shore) (see Table 3). Bed width was wider along the transects placed south of the outfall alignment and began slightly higher up in the intertidal zone, particularly at the transects 55 to 105 ft south of the outfall alignment. There was no eelgrass observed below the 220 ft distance along the transects (approximately +0.1 ft MLLW). Density of eelgrass within the bed was much greater than at Richmond Beach with an average density of 108 shoots/m² (sd = 96 shoots/m²). For all 13 transects surveyed eelgrass density was 21 shoots/m² (sd = 60 shoots/m²) within the quadrats, including quadrats with no eelgrass.

3.2.3. Macroalgae

The upper intertidal, consisting primarily of gravel, contains no macroalgae. Macroalgae habitat begins where the intertidal starts to slope at approximately +2 ft MLLW.

The green alga, *Ulva* sp. dominated the mid-intertidal area from approximately +1.0 to – 1.0 ft MLLW. Algal cover was dense (up to 100% coverage) from 0 to the 100 ft mark along the transects (approximately +1.0 to +0.3 ft MLLW). *Ulva sp.* was sparse from approximately +0.3 to –1.0 ft MLLW (average coverage approximately 10%) and disappeared completely below the 440 ft distance along the transects. Other algal species observed include *Enteromorpha* sp. and *Mastocarpus papillatus*. Kelp was not observed in the survey area. Macroalgae data for the Zone 6 alignment and its lateral transects are presented in Table 4.

3.2.4. Organisms

Few organisms were observed in the survey area. Bivalve siphon holes were observed in the intertidal survey area where the substrate is a mix of gravel and cobble. In the lower intertidal area (+0 ft MLLW) where substrate is sandy, few animals were observed. Juvenile speckled sanddabs were observed on the offshore sandy substrate (below –2.0 ft MLLW) throughout the survey area.

Table 3. Zone 6 Eelgrass Distribution

							Aver	age Density (sh	oots/m²)					
			Transect #											
Distance Along Transect (ft)	Depth (MLLW) ^a	105N	80N	55N	30N	20N	10N	Outfall Alignment (0)	10S	208	30S	55S	808	105S
0	+2.0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	+1.0	0	0	0	0	0	0	0	0	0	0	0	16	16
40	+1.0	0	0	0	0	0	0	0	0	0	0	128	244	192
60	+1.0	0	60	356	128	32	208	320	0	8	16	28	0	320
80	+0.0	0	172	64	188	180	152	164	180	268	24	64	336	288
100	+0.3	12	148	160	112	20	8	12	88	112	52	12	188	52
120	+0.6	0	0	12	68	0	160	12	84	52	12	160	232	80
140	-0.3	32	24	96	124	16	0	0	72	148	0	280	240	100
160	+0.3	0	0	40	0	0	0	0	44	84	72	12	160	288
180	+1.2	0	0	20	0	0	0	12	28	80	0	8	0	0
200	+1.0	0	0	0	0	0	0	0	8	0	0	0	12	0
220	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
240	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
260	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
280	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
300	+0.1	0	0	0	0	0	0	0	0	0	0	0	0	0
320	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
340	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
360	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
380	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
400	-2.1	0	0	0	0	0	0	0	0	0	0	0	0	0
420	-2.3	0	0	0	0	0	0	0	0	0	0	0	0	0
440	-1.9	0	0	0	0	0	0	0	0	0	0	0	0	0
460	-3.1	0	0	0	0	0	0	0	0	0	0	0	0	0

			Average Density (shoots/m²)											
			Transect #											
Distance Along Transect (ft)	Depth (MLLW) ^a	105N	80N	55N	30N	20N	10N	Outfall Alignment (0)	108	208	30S	55S	80S	1058
480	-4.3	0	0	0	0	0	0	0	0	0	0	0	0	0
500	-5.9	0	0	0	0	0	0	0	0	0	0	0	0	0
520	-7.0	0	0	0	0	0	0	0	0	0	0	0	0	0
540	-8.6	0	0	0	0	0	0	0	0	0	0	0	0	0
560	-12.6	0	0	0	0	0	0	0	0	0	0	0	0	0

a depths are for transect #(0)

n/d = no data

Shaded cells denote monitoring stations where eelgrass was present.

Table 4. Zone 6 Macroalgae Distribution

			Average Density (% Cover)											
			Transect #											
Distance Along Transect (ft)	Depth (MLLW) ^a	105N	80N	55N	30N	20N	10N	Outfall Alignment (0)	108	20\$	30S	55S	80S	1058
0	+2.0	0	0	0	0	0	75	75	75	75	75	75	75	75
20	+1.0	0	0	0	72	82	93	78	90	75	80	80	75	42
40	+1.0	0	0	75	50	57	57	78	40	50	40	28	10	20
60	+1.0	75	53	32	58	75	45	10	90	80	25	85	80	25
80	+0.0	75	13	57	8	13	27	37	68	8	58	58	10	20
100	+0.3	17	7	3	8	8	8	10	8	7	10	78	20	58
120	+0.6	20	0	0	3	0	13	3	13	5	5	7	5	20
140	-0.3	7	17	3	2	2	0	0	13	10	0	10	7	20
160	+0.3	20	17	7	0	0	7	8	17	15	3	12	22	5
180	+1.2	40	20	10	10	10	10	10	10	20	10	7	3	0
200	+1.0	27	20	10	0	0	10	0	7	0	3	10	7	3
220	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
240	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
260	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
280	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
300	+0.1	0	0	0	0	0	0	0	0	0	0	0	0	0
320	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
340	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
360	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
380	n/d	0	0	0	0	0	0	0	0	0	0	0	0	0
400	-2.1	3	0	0	0	0	0	0	0	0	0	0	0	0
420	-2.3	0	0	0	0	0	0	0	0	0	3	0	0	0
440	-1.9	0	0	0	2	0	0	0	0	0	0	0	0	0

			Average Density (% Cover)												
			Transect #												
Distance Along Transect (ft)	Depth (MLLW) ^a	105N	80N	55N	30N	20N	10N	Outfall Alignment (0)	108	208	30S	55S	80S	1058	
460	-3.1	0	0	0	0	0	0	0	0	0	0	0	0	0	
480	-4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	
500	-5.9	0	0	0	0	0	0	0	0	0	0	0	0	0	
520	-7.0	0	0	0	0	0	0	0	0	0	0	0	0	0	
540	-8.6	0	0	0	0	0	0	0	0	0	0	0	0	0	
560	-12.6	0	0	0	0	0	0	0	0	0	0	0	0	0	

^a depths are for transect #(0)

n/d = no data

Note: Macroalgae includes all species except eelgrass

Shaded cells denote monitoring stations where macroalgae was present.

3.3. ZONE 7S--POINT WELLS

The Point Wells, Zone 7S preferred alignment transects were established on August 7 and 8, 2003 and the eelgrass survey was performed on August 11, 12 and 18, 2003. Thirteen parallel transects, including the transect along the alignment, were established. The parallel transects were established at 10, 20, 30, 55, 80, and 105 ft as described for Zone 6. Survey positions were spaced at 20 ft increments along each transect. Survey positions along the 20, 30, and 80 ft north and south transects were located using compass bearings and tape measures attached to the stakes at the central alignment. Transects were established from +15 ft MLLW and extended offshore to approximately -20 ft MLLW. Eelgrass and other macroalgae were not present beyond this depth.

3.3.1. Substrate Characterization

The baseline transect along the outfall alignment began at the toe of a riprap wall bordering the Chevron Richmond Beach Asphalt Terminal. At the toe of the riprap (+15.0 ft MLLW) the intertidal area generally consists of approximately 80% cobble/gravel substrate with small amounts of sand that extends throughout the study area to a depth of approximately -2.0 ft MLLW, or a distance of approximately 240 ft along the transect. Substrate changes primarily to sand from -2.0 to -20 ft MLLW. The offshore area along the south 105 ft transect contained some gravel patches.

3.3.2. Eelgrass Distribution

Eelgrass data for the proposed Point Wells alignment and parallel transects are presented in Table 5 and Figure 9. Eelgrass distribution along the preferred alignment at Point Wells was patchy north of the baseline transect and slightly wider and more continuous south of the baseline transect. These findings are consistent with observations of Woodruff et al. (2001) who observed a large, moderately dense bed begin to terminate at the southern point of Point Wells. Eelgrass appeared at the 220 ft distance along the transects (approximately –2.0 ft MLLW) and terminated at the 420 ft distance along the transects. In areas where eelgrass was present, average density was 41 shoots/m² (sd = 28 shoots/ m²) with a maximum average density of 113 shoots/m². The highest densities were observed at depths between –4 to approximately –9 ft MLLW. For all transects surveyed, average eelgrass density was 9 shoots/m² (sd = 22 shoots/m²) within the quadrats, including quadrats with no eelgrass. Eelgrass along the alignment transect (transect # 0) contained a narrow band of patchy eelgrass, approximately 100 ft in length. Average densities along the edge of this band ranged from 4 to 12 shoots/m².

Eelgrass distribution mirrors the bathymetry of the area. The northern end of the survey area has a narrower shelf relative to the southern end. To the north, the eelgrass terminates 320 feet from the shoreward terminus of the transect (-9.1 ft MLLW). Along the southern end of the area the eelgrass terminates 400 ft from the shoreward terminus of the transect (-14.6 ft MLLW).

Table 5. Zone 7S - Point Wells Eelgrass Distribution

			Average Density (shoots/m²)											
			Transect #											
Distance Along Transect (ft)	Depth (MLLW) ^a	105N	80N	55N	30N	20N	10N	Outfall Alignment (0)	10\$	208	30S	55S	80S	1058
0	int	0	0	0	0	0	0	0	0	0	0	0	0	0
20	int	0	0	0	0	0	0	0	0	0	0	0	0	0
40	int	0	0	0	0	0	0	0	0	0	0	0	0	0
60	int	0	0	0	0	0	0	0	0	0	0	0	0	0
80	int	0	0	0	0	0	0	0	0	0	0	0	0	0
100	int	0	0	0	0	0	0	0	0	0	0	0	0	0
120	int	0	0	0	0	0	0	0	0	0	0	0	0	0
140	int	0	0	0	0	0	0	0	0	0	0	0	0	0
160	int	0	0	0	0	0	0	0	0	0	0	0	0	0
180	int	0	0	0	0	0	0	0	0	0	0	0	0	0
200	int	0	0	0	0	0	0	0	0	0	0	0	0	0
220	-2.0	0	0	5	0	12	4	8	8	19	0	23	39	0
240	-2.6	20	31	0	52	19	0	11	15	8	65	25	36	100
260	-3.3	0	44	0	36	11	113	67	0	8	0	0	0	4
280	-4.2	0		60			0	25	39			0		27
300	-6.0	96	49	81	85	49	40	49	79	57	73	53	5	0
320	-10.9	47	19	45	0	4	0	5	5	24	65	63	65	47
340	-14.8	0	0	0	0	0	0	0	0	7	16	67	63	65
360	-21.8	0	0	0	0	0	0	0	0	0	0	16	49	87
380	n/d	0	0	0	0	0	0	0	0	0	0	0	0	67
400	n/d	0		0			0	0	0			0		17
420	n/d	0		0			0	0	0			0		0

^a depths are for transect #(0)

n/d = no data

blank rows indicate data was either lost or not collected

Shaded cells denote monitoring stations where eelgrass was present.

3.3.3. Macroalgae

From the toe of the riprap substrate extending offshore to the transition between cobble and sand substrates algal cover is continuous and dominated by the green alga *Ulva*. sp. Based on visual inspections and the uniformity of algal cover in the intertidal, algal cover was only collected on August 11 and 12, 2003. Algal coverages for the remaining transects (80, 30, and 20; north and south), should be considered equivalent to other transect stops. Other species comprise less that five percent of the algal cover and consist of small amounts of the red algae *Mastocarpus papillatus*, *Porphyra* sp. and Sarcodiotheca sp. Generally, Ulva sp. comprises approximately 95 percent of the coverage in this area. At -1.5 ft MLLW *Ulva* sp. is present in lower concentrations than in the intertidal (coverage 10-30%). Below -10 ft MLLW the substrate is sand with no algae. Two to three individual stipes of the kelp *Nereocystis* sp. were observed in the subtidal project area. On close observation, these plants were attached to small cobble and were most likely transient through the area or are rare recruits from floating kelp mats washed to shore from other locations. Because of the predominantly sandy substrate, and the high algal cover in the shallow subtidal area, this location is not likely to sustain a reproducing kelp bed. Though not common, a few blades of *Laminaria* sp. were observed scattered in the survey area. Macroalgae data for the proposed Point Wells alignment and its lateral transects are presented in Table 6.

3.3.4. Organisms

From +15.0 ft MLLW to approximately 0 ft MLLW, there were a few invertebrate species commonly observed. The most frequent species observed was the barnacle *Balanus* sp., which was observed throughout the intertidal area up to approximately +6.0 to +8.0 ft MLLW. Few bivalve shells were observed, however, numerous siphons were observed in the lower portions of the intertidal indicating that bivalves were present. Shore crabs, limpets, and snails were also observed.

Several species of fish were observed below approximately –2.0 ft MLLW. Flat fishes including the speckled sanddab (*Citharichthys* sp.) and other flounders were seen in abundance throughout the survey area. Schools of perch, most commonly the pile perch (*Rhacochilus vacca*) and the tube-snout (*Aulorhynchus flavidus*) were observed within the eelgrass beds.

Although not recorded in survey quadrate, crabs, including the Dungeness crab (*Cancer magister*) and the red rock crab (*Cancer productus*) as well as *Pugettia gracilis* were occasional observed among the eelgrass in the deeper subtidal areas. Other common species observed throughout the survey area include the moon snail (*Polinices lewisii*) and a small shrimp (*Pandalus* sp.). On the offshore edges of the eelgrass (–10.0 ft MLLW), a few individual sea stars were observed including *Evasterias troshelli* and *Pycnopodia helianthoides*.

Table 6. Zone 7S — Point Wells Macroalgae Distribution

							Ave	rage Density (%	Cover)					
		Transect #												
Distance Along Transect (ft)	Depth (MLLW) ^a	105N	80N	55N	30N	20N	10N	Outfall Alignment (0)	108	208	30S	55S	80S	105S
0	int	0		0			0	0	0			0		0
20	int	0		0			0	0	0			0		0
40	int	0		0			0	0	3			0		0
60	int	0		0			75	78	60			32		14
80	int	3		17			35	75	70			77		58
100	int	85		77			63	43	53			80		92
120	int	78		72			50	50	62			77		82
140	int	67		90			72	73	78			85		93
160	int	83		82			80	80	77			77		47
180	int	72		82			82	82	82			80		37
200	int	58		80			87	82	88			93		82
220	-2.0	83	77	75	93	63	83	63	68	75	60	68	82	62
240	-2.6	45	27	77	40	75	72	60	52	33	40	57	72	32
260	-3.3	10	2	53	43	40	18	15	1	42	10	28	28	3
280	-4.2	0		13			0	7	3			0		3
300	-6.0	22	15	23	17	17	5	10	37	37	23	13	2	0
320	-10.9	8	5	10	0	5	0	8	8	7	12	42	32	40
340	-14.8	0	0	0	0	0	0	0	0	2	5	78	18	37
360	-21.8	0	0	0	0	0	0	0	0	0	0	3	8	50
380		0	0	0	0	0	0	0	0	0	0	0	0	50
400														15
420														5

^a depths are for transect #(0)

blank rows indicate data was either lost or not collected

Note: Macroalgae includes all species except eelgrass

Shaded cells denote monitoring stations where macroalgae was present.

4. CONCLUSIONS

Table 7 summarizes the eelgrass survey results for the three proposed alignments, and estimates the amount of eelgrass that would be disturbed by outfall construction. The amount of eelgrass disturbed was calculated by multiplying the area that would be disturbed by the average eelgrass density in that area. The trench required to place the outfall would be sheeted to -30 ft MLLW, which would encompass the eelgrass beds. The sheeted trench would be up to 20 to 25 feet wide. For the purpose of these calculations, trench width was assumed to be 25 ft (7.62 m). The length used in the calculations was the length of the transect (provided in Table 7) because this is the length over which the eelgrass densities are averaged.

The eelgrass density along the proposed alignments was estimated by taking the average of the central transect (i.e., the transect on the proposed alignment) and the lateral transects at 10 ft on either side of the central transect. For the proposed Richmond Beach alignment (for which the closest transects to the central transect were at 20 ft on either side), the average was taken for just the central transect, and for the central transect and the lateral transects at 20 ft on either side of the central transect. Including the lateral transects in the average gave the same average density along the proposed Richmond Beach alignment (14 shoots/m²), so the estimate of the amount of eelgrass disturbed during construction was the same either way.

The proposed alignment offers the best opportunity to minimize and avoid impacts to sensitive eelgrass communities. This alignment has the lowest eelgrass density both overall and within the patches (with the exception of the shallow beds at Richmond Beach) and the lowest density along the trench that would be required to construct the proposed alignment. The amount of eelgrass disturbed at the proposed Point Wells alignment would be approximately one-third the amount of eelgrass that would be disturbed at the proposed Zone 6 alignment, and approximately one-sixth of the amount of eelgrass that would be disturbed at the potential Richmond Beach alignment.

Table 7.

Summary of Eelgrass Distribution at Brightwater Marine Outfall Alternatives and Amount of Eelgrass that Would be Disturbed During Construction of a 25-foot Wide Sheeted Trench

Location	Beginning Depth (ft MLLW)	Ending Depth (ft MLLW)	Transect Length (m)	Density in Patches (shoots/m²)	Density Along Trench (shoots/m²)	Amount of Eelgrass Disturbed (thousand shoots)
Richmond Beach	+0.7	-9.8	390	24 ^a , 58 ^b	14	41
Zone 6	+1.7	-1.0	171	108	18	23
Point Wells	-1.5	-14.6	128	41	7	7

a above -2.9 ft MLLW

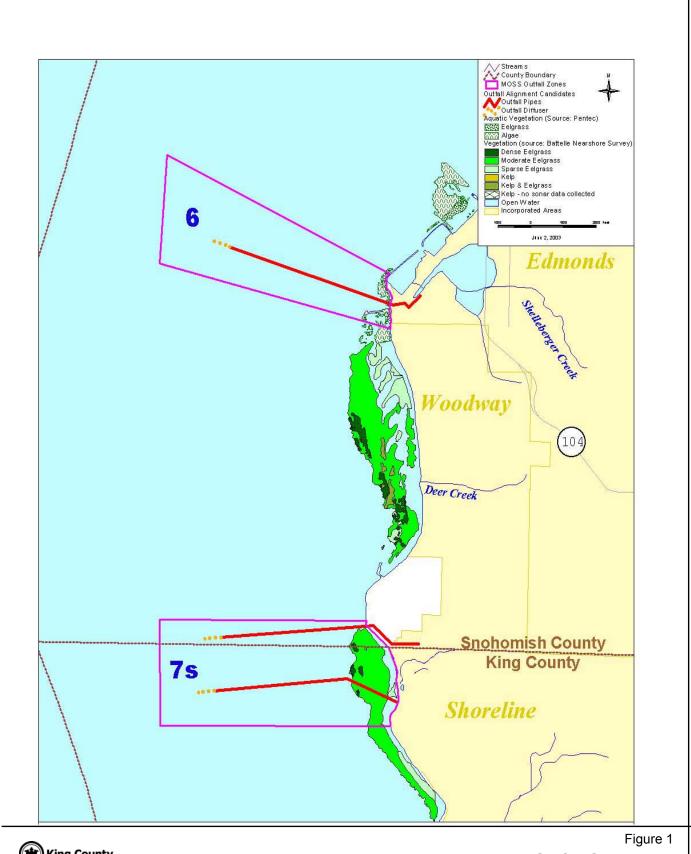
b below -2.9 ft MLLW

5. REFERENCES

- King County, 2003. Eelgrass Survey Monitoring Plan for the Brightwater Marine Outfall Alternative. Prepared for King County Department of Natural Resources and Parks, Seattle WA. August 2003.
- WDFW. 1999. Eelgrass/Macroalgae Habitat Survey Guidelines. Habitat and Land Services. Olympia Washington.
- Woodruff, D.L., P.J. Farley, A.B. Borde, J.S. Southard, and R.M. Thom. 2001. King County Nearshore Habitat Mapping Data Report: picnic Point to Shilshole Marina. Prepared for King County DNR by Battelle Marine Sciences Laboratory, Sequim, Washington.

Figures

Figure 1	Outfall Siting Area
Figure 2	Eelgrass Survey Transects Outfall Zone 6
Figure 3	Eelgrass Survey Transects Zone 7S, Pipe 3
Figure 4	Eelgrass Survey Transects Zone 7S, Richmond Beach
Figure 5	Quadrat Locations at Permanent Markers
Figure 6	Apparatus for Locating Quadrats at Permanent Markers
Figure 7	Outfall Zone 7S – Richmond Beach – Mean Eelgrass Density
Figure 8	Outfall Zone 6 – Mean Eelgrass Density
Figure 9	Outfall Zone 7S – Point Wells – Mean Eelgrass Density



King County

Department of Natural Resources and Parks

Wastewater Treatment Division

Outfall Siting Area
BRIGHTWATER REGIONAL
WASTEWATER TREATMENT SYSTEM

File Name: TM09XF0X Prepared by: Bruce Nairn

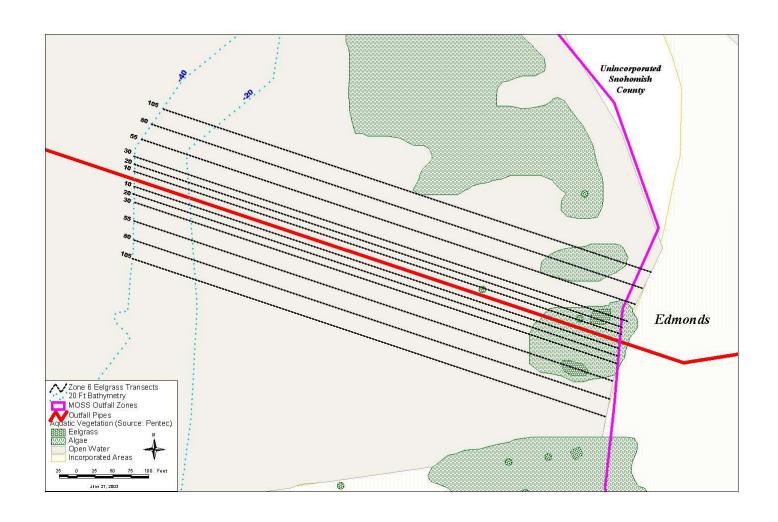




Figure 2

Eelgrass Survey Transects Outfall Zone 6

BRIGHTWATER REGIONAL
WASTEWATER TREATMENT SYSTEM

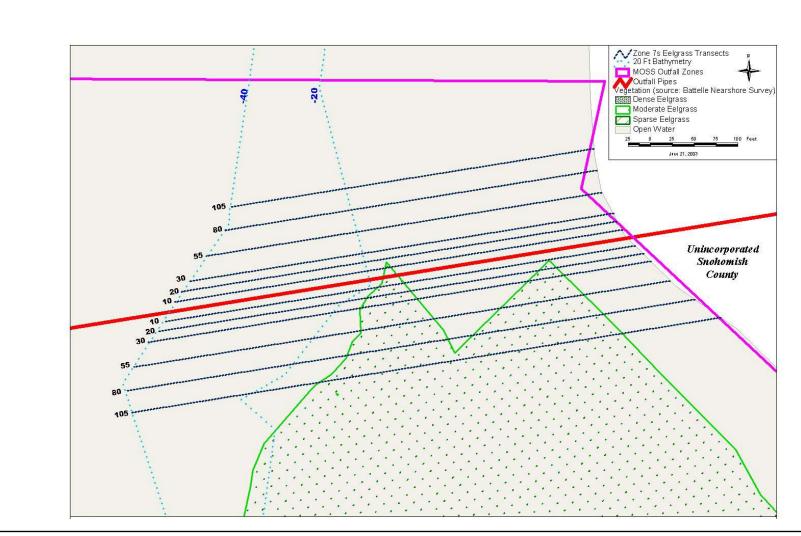
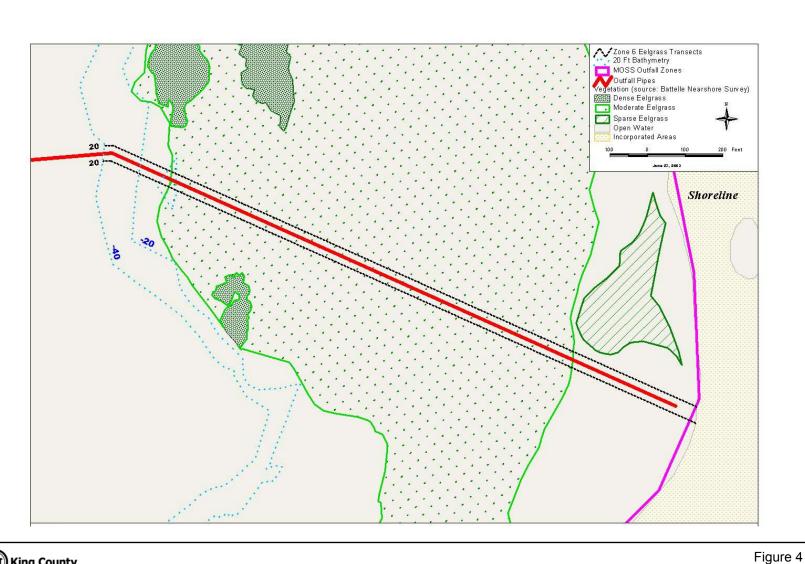




Figure 3

Eelgrass Survey Transects Zone 7S, Pipe 3

BRIGHTWATER REGIONAL
WASTEWATER TREATMENT SYSTEM



King County
Department of Natural Resources and Parks
Wastewater Treatment Division

File Name: TM09XF0X
Prepared by: Bruce Nairn

Eelgrass Survey Transects Zone 7S, Richmond Beach

BRIGHTWATER REGIONAL

WASTEWATER TREATMENT SYSTEM

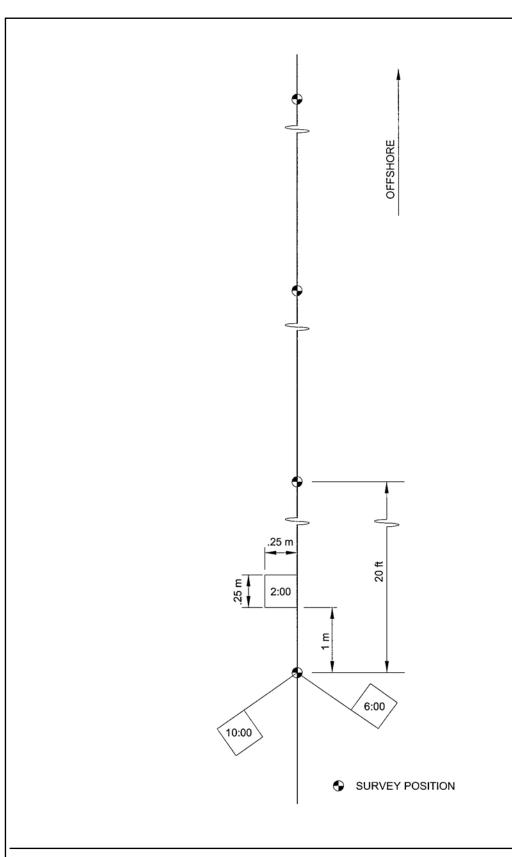
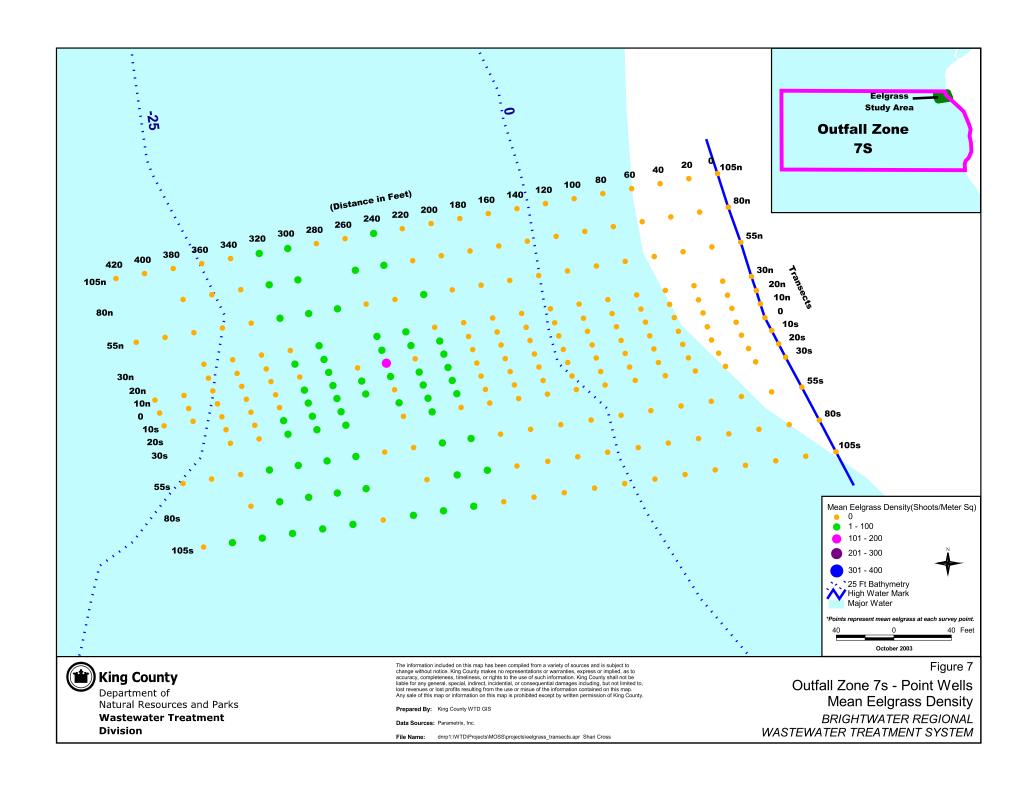
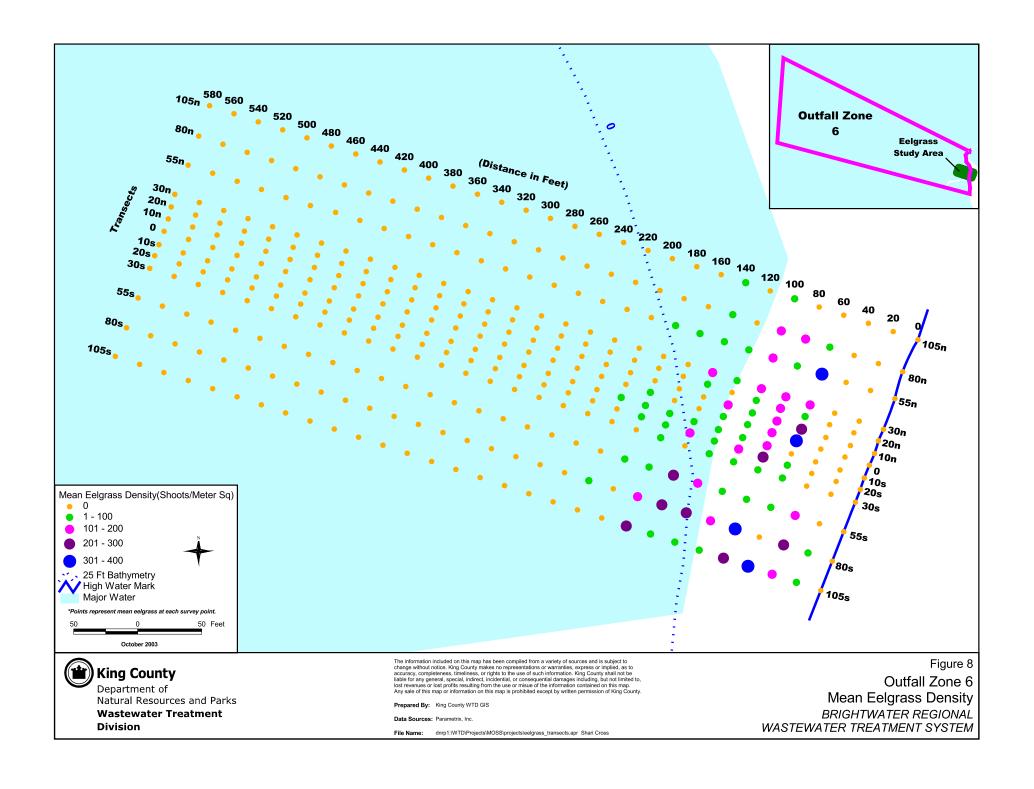


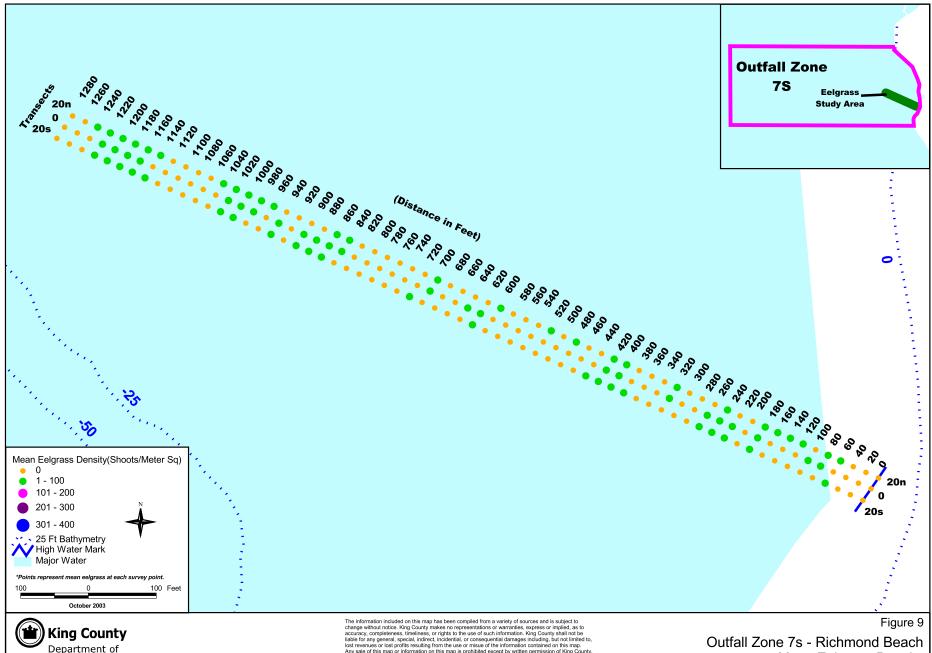




Figure 6







Natural Resources and Parks

Wastewater Treatment Division

In the minimum induction on the map in the section product of the section of the

Prepared By: King County WTD GIS

Data Sources: Parametrix Inc.

File Name: dnrp1:\WTD\Projects\MOSS\projects\eelgrass_transects.apr Shari Cross

Mean Eelgrass Density BRIGHTWATER REGIONAL WASTEWATER TREATMENT SYSTEM

Appendix A

Richmond Beach Eelgrass Survey Datasheets

Richmond Beach – Outfall Zone 7S, July 23, 2003 Datasheets

Transect Stops— 20-foot intervals along each transect from 0 to 720 feet.

Transects — 0, 20 feet North, 20 feet South. Shown as column headings on the datasheets.

Zone 7s Richmond Beach Data Forms

Parametrix project number

555.1521.045.02.07

	Richmon Deach Transect Stops King County Eelgrass Survey Data Form											
Date: 7/23/03 Depth Depth @ MLLW Visibility Boulder (%)	Time:	2'2 300 3	R 8	Hime: L	320	R S	Time	340	(R)	Northern Transect Center Transect Southern Transect		
Cobble (%) Gravel (%) Sand (%) Mud(%)	100	100	100	100		100		100	100	Substrate Characteristics		
Eelgrass 2 o'clock Eelgrass 6 o'clock Eelgrass 10 o'clock Algae(%) 2 o'clock	0	ğ	0		4	6			0	Eelgrass Counts		
Algae(%) 6 o'clock Algae(%) 10 o'clock Dominant Algal Species:					UV	S 000				Algal Counts		
Goeduck Dungeness Starfish Fish										Organisms Observed		
Other				A Company of the Comp						& Notes		

Richmond Beach
g County Eelgrass Survey Data Form

	King	County Eel	grass Surve	y Data Form	· !			
1523	•	1521	•					1513
Time:	752	0	Time:	13/6		Time	15%	2
L	0	B	L	20	R	L	40	R
9	8	×	8	1	8	4	8	8
0	0.5				W.			
				3-4			3-4	
				·				
5								
			5				1	
95	100	100	95	100	100	(00)	100	100
				·				
•	\leq	O	0	0	Ø		0	0
,	Ö	(Ö	0	0	Q	0	0	Q
	O_	Q		0	U	0		0
0	Q		1,0	2	Q	0		
)	Q	10	0	0	0	5	0,	
()		0	\cup	0	()	0	5	()*
1								
14/14		ulu				uly	ally	
				10				5
	,			1	1			<u>U'.</u>
	-	5		W/	1			
	2	22		7 3	1/h		3	
	-	1		120	B		n	
<u> </u>	17	1			21		Ü,	
	()	l nsa	Q /		le		73	
20		4	,	Z .	0		6-)	
	. • •	i di .	ah	7	3			•
	Time: L S S O O O U V V V V V V V V V V V V	Time: /5 2 L 0 B 3 -0.5	Time: /5 2 0 L 0 B 8 8 8 -0.5 -0	Time: /52 Time: L	Time: /5 2 0 Time: /3/6 L 0 B L 20 9 8 8 8 -0.5 -0	Time: /5 2 0 Time: /3/6 L 0 B L 20 R 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Time: /520 Time: /3/6 Time L 0 B L 20 R L 8 8 8 8 8 8 8 5 -0.5	Time: /5/2 Time: /3/6 Time /5/2 L 0 B L 20 R L 40 S S S S S S S S S S S S S S S S S S

Richmond Beach
King County Eelgrass Survey Data Form

1	i .		1.500	1502		1504			
Date: 7/23/03	Time:	150	6	Time:	1458	,			
	L	60	R	L	80	R			
Depth	8	4	8	8	9	: 9			
Depth @ MLLW		0	3	1 \$1 No.					
Visibility	3	-4			4				
Boulder (%)		/							
Cobble (%)									
Gravel (%)									
Sand (%)	100	100	100	100	100	100		·	
Mud(%)	<u> </u>								
Eelgrass 2 o'clock	10	\mathcal{L}		0	0	2 '			
Eelgrass 6 o'clock	0		14	8	0	5			
Eelgrass 10 o'clock	3	0	2)	0	~6	0			,
Algae(%) 2 o'clock	3	()	0	0	0	0			
Algae(%) 6 o'clock	V U	5	5	O I	0_	5			
Algae(%) 10 o'clock	3	0	10		5	0)		
Dominant Algal									
Species:	UNI	Uluq	Ulva		Ulva	Ulve			
Goeduck						,			
Dungeness				1,1	verle	2	0		
Starfish						16	7		
Fish					1.0	10 6	o		
Other 40VSe					00	7	afor		
					lug.	22	つ		
					20,0	110-3			
	<u> </u>				100	1 4			

Richmond Beach

King County Eelgrass Survey Data Form

/1	1411	_	14/2	1408		1406	1403	÷ .	1402
Date: 7/23/03	Time:	1410	, , , , , , , , , , , , , , , , , , ,	Time:	1403		Time	1400	
	L	100	R	L	120	R	L	140	R
Depth	9	9		9	9	9	9	9	9
Depth @ MLLW		,			- 1	n.			
Visibility		4			1			3-4	
Boulder (%)	. 21	(0				·
Cobble (%)					``			^	
Gravel (%)	,								
Sand (%)	100	100	100	100	100	100	100	100	100
Mud(%)	,		\sim						
Eelgrass 2 o'clock	0	(1)	\mathcal{Q}	Ò	\mathcal{L}	0'	\mathcal{O}	0	25
Eelgrass 6 o'clock	0	0	0	U	0	0	0	0	5
Eelgrass 10 o'clock	0	8_	0	0	\bigcirc	14	0	0	0
Algae(%) 2 o'clock	5	0	Q Q	Q	Q	0	0,	0	5
Algae(%) 6 o'clock	0	0	0	Ô	0	0	15	0	0
Algae(%) 10 o'clock	Q	(0)	0		-0	5	θ	0	0
Dominant Algal		alva	·			,			
Species:	4129		1			ulia	una		
Goeduck					·				
Dungeness									
Starfish									0 0
Fish	·							+	7 2
Other								9	200
		1	,					2	0 0
								~ 2	00
	<u> </u>	ν,	:			·			

Rich mond Beach King County Eelgrass Survey Data Form

		_		grass Surve				
	1357		1356	1352	-	1349		39 -
Date: 7/23/03	Time:	135		Time:	1345			
/ /	L	_ 160	R	L	180	R		
Depth	9	9	9	9	9	9	4	
Depth @ MLLW	/				1	•		
Visibility		4			4-5			
Boulder (%)						·		
Cobble (%)	·			5				
Gravel (%)				5				
Sand (%)	100	100	1.00	95	100	100		
Mud(%)						,	1 10	
Eelgrass 2 o'clock	0	0	20	0	6	3		
Eelgrass 6 o'clock	0	0	20	28	30	D		
Eelgrass 10 o'clock		0	12	0	0	7		
Algae(%) 2 o'clock	8	0	25	0	0	5		
Algae(%) 6 o'clock		0	0	10	0	D		
Algae(%) 10 o'clock	θ	\circ	5	10	10	0		
Dominant Algal)		4/19	Ulva	ulva		
Species:								a
Goeduck					0			
Dungeness						\sim		
Starfish						ا کو ا		
Fish						2		
Other						oneman,		
					·	2		
						3		
						<i>प</i>		

Richmond Beach King County Eelgrass Survey Data Form

1 1							•		_
Date: 7/23/03	Time:	145		Time:	150	·	Time	20	J
/ //	L	200	R	L	220	R	Ļ	240	R
Depth	8	8		8	S	\mathcal{S}	8	Z	Y
Depth @ MLLW						•			
Visibility	3	3	3	2	3	3	3	3	_ ろ
Boulder (%)									
Cobble (%)									
Gravel (%)									
Sand (%)	100	100	100	100	100	100	100	100	100
Mud(%)						200			
Eelgrass 2 o'clock	Q			X	1	4	10	28	\square
Eelgrass 6 o'clock			O	P	5	2	126	6	0
Eelgrass 10 o'clock		Δ	0	14	3	0	20	24	
Algae(%) 2 o'clock				20	10		105	25	0_
Algae(%) 6 o'clock				20	30	<u> </u>	2318	ĨO	0_
Algae(%) 10 o'clock				70	30		7715	10	10
Dominant Algal		2		1 1			ac	10	<u>.</u>
Species:		,		UV	UV	•	1)/109	$\mathcal{U}\mathcal{V}$	<u>UV</u>
Goeduck									
Dungeness			;					·	
Starfish									
Fish									
Other									
				,					
	<u></u>	l 			<u> </u>				

Richmond Beach
King County Eelgrass Survey Data Form

	,								
Date: 7/23/03	Time:	2 C	8	Time:	21:	5			
	Ţ	260	Ŗ		2,80	B			·
Depth	8	8	X	8	X.	8			
Depth @ MLLW			J						
Visibility	3	3	3	9	3_	3			
Boulder (%)									
Cobble (%)									
Gravel (%)			,						
Sand (%)	100	100	100	100	100	100			
Mud(%)						·		·	
Eelgrass 2 o'clock	2	4	0	0	0	0			
Eelgrass 6 o'clock	10	4	<i>Q</i>	Q	\mathcal{O}	Q			
Eelgrass 10 o'clock	12	30	0						
Algae(%) 2 o'clock	0	==		10					
Algae(%) 6 o'clock	10	E		0_	Ü				
Algae(%) 10 o'clock	10	15							
Dominant Algal									
Species:	UV	W	-7	LVV	NE COST	And the second second		^	
Goeduck									
Dungeness							4		
Starfish									
Fish				,					
Other			>						

Richmon Beach King County Eelgrass Survey Data Form

					· · · · · · · · · · · · · · · · · · ·		-		
Date: 7/23/03	Time:	22	2	Time:	7,23	7	Time	225	
. ,		300	R	L	320	R	L	340	R
Depth	LÕ	8	1 8	8	8	8	8	8	R
Depth @ MLLW						1		Ť	
Visibility	3	3	3	3	3	3	3	3	3
Boulder (%)									
Cobble (%)									
Gravel (%)									
Sand (%)	1a)	100	100	100	100	100	100	100	100
Mud(%)		_			70	1129	10		
Eelgrass 2 o'clock		0	0	0	4	1	0	0	0
Eelgrass 6 o'clock	0	Q	0		4	8	0	0	Ŏ
Eelgrass 10 o'clock	0	CI	0	0	0	8	8	()	
Algae(%) 2 o'clock				mi		6			
Algae(%) 6 o'clock				5	O	8			
Algae(%) 10 o'clock				0	0	6			
Dominant Algal						\			
Species:	-			NM	UV	VI		-	
Goeduck					144	V			
Dungeness				-					
Starfish					Ŷ				
Fish									
Other									
					16				

Ring County Eelgrass Survey Data Form

Date: 7/23 /03	Time:	41	7	Time:					
	<u> </u>	360 ^{°°}	Ŗ	1	380	R			
Depth	Ŏ	8	\mathcal{L}	8	8	8			
Depth @ MLLW			O						
Visibility	2	3	3	3	3	3			
Boulder (%)	report Co. xx		·						
Cobble (%)							-		
Gravel (%)				1	7 0	. 7			•
Sand (%)	100	100	100	100	100	100			
Mud(%)						ē.			
Eelgrass 2 o'clock		Q	0	V	4	0			
Eelgrass 6 o'clock			Q		9	1.0			
Eelgrass 10 o'clock		\bigcirc	0	4	W'	0			
Algae(%) 2 o'clock			5	0					
Algae(%) 6 o'clock			0	1.5					
Algae(%) 10 o'clock			0	6					
Dominant Algal		والمساورين	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \						
Species:			C+A	W					
Goeduck									
Dungeness									
Starfish								`	
Fish									
Other	*								
*			/						
				ă .					
	,								

BP

King County Eelgrass Survey Data Form

Shove

	1316			131D					
Date: 7/23/03	Time:	1311	12.19	Time:	1301	1305	Time	1255	1256
	L	400	R	L	420	R	L	440	R
Depth	9)	9)	91	91	91	0,1		91	91
Depth @ MLLW	•	3			-		~	,	
Visibility		3-5			3-5			3-5	
Boulder (%)									
Cobble (%)									
Gravel (%)								2	
Sand (%)	100	100	100	100	100	100	100	98	160
Mud(%)			, T				•		
Eelgrass 2 o'clock	Č	0	0	12	4	2.	01	0	0
Eelgrass 6 o'clock	5	0	0	12	O	4	07	0	<i>(</i>)
Eelgrass 10 o'clock	3	10	. 働ス		V	13	105		.0
Algae(%) 2 o'clock	10	8	·	2	2	/			
Algae(%) 6 o'clock	5			3	£	4	F		
Algae(%) 10 o'clock	30			L Δ ·	5		5		
Dominant Algal	6)00			ନ୍ଦ୍ର	ee) 9.	cela	+-		,
Species:				inlica	UlVa		7		
Goeduck				,			Ital		
Dungeness						-			
Starfish							1 % T		
Fish							S F Ch P		
Other					-				
							C C C C C C C C C C C C C C C C C C C		

Richmond Beach King County Eelgrass Survey Data Form

>	ノ しい
	1

	1257			1245					
Date: 7/23/03	Time:	1249	1250	Time:	1239	1242	,		
	L	46Ŏ	R	L	480	R			
Depth	9)	91	91	91	91	91			
Depth @ MLLW		,		1					
Visibility	3-5			3-5					
Boulder (%)								-	
Cobble (%)									
Gravel (%)	ま	10	5						
Sand (%)	95	90	95	100	100	100			
Mud(%)				Y Y					·
Eelgrass 2 o'clock	0.	40	0	0	0	13			
Eelgrass 6 o'clock	0	0	0	6	0	21			
Eelgrass 10 o'clock		0	6	0	0	2			
Algae(%) 2 o'clock			·		1	For			
Algae(%) 6 o'clock			,		77				
Algae(%) 10 o'clock					231	- 1			
Dominant Algal					0 40	(V.S.)		·	
Species:	·					***			
Goeduck						K			·
Dungeness									
Starfish									
Fish									
Other									

3P

Richmond Beach
King County Eelgrass Survey Data Form

Shore

236 1232 Date: Time: Time: 1229 230 Time 500 R 520 540 R Depth 9) 81 91 81 91 Depth @ MLLW 47 Visibility Boulder (%) Cobble (%) Gravel (%) Sand (%) 100 00 100 100 100 Mud(%) Eelgrass 2 o'clock 10 Eelgrass 6 o'clock 0 Eelgrass 10 o'clock Algae(%) 2 o'clock Algae(%) 6 o'clock Algae(%) 10 o'clock Dominant Algal Species: Goeduck Dungeness Starfish Fish Other

Ring County Eelgrass Survey Data Form

001

Shove

	1226								Shove
Date: 7/23/03	Time:	1216	1218	Time:	1212	1213			
	L	560	R	L	580	Ř			
Depth	R	ව	. 81	91	81	8!			
Depth @ MLLW						-		ļ	
Visibility	Y	41	41		WL				
Boulder (%)			```						
Cobble (%)									
Gravel (%)									
Sand (%)	100	100	100	100	100	100			
Mud(%)					100				
Eelgrass 2 o'clock	0	0	0	0	0	0			
Eelgrass 6 o'clock	0	0	0	0	0	0			
Eelgrass 10 o'clock		0	0		0	9	,		
Algae(%) 2 o'clock	0	0	0	0	0 "	0			
Algae(%) 6 o'clock	0	0	0		0_	0			
Algae(%) 10 o'clock	0	0	0			0	'		
Dominant Algal									
Species:									
Goeduck									
Dungeness									
Starfish									
Fish	2								
Other									
		<u> </u>							
			<u> </u>						
·									

Ring County Eelgrass Survey Data Form

	1219		,,	g	y Dala i Oilli	122	3 1234		1232
Date: 7/23/03	Time:	1213	121	Time:	1/22		Time	1229	
	L	600	R	L	620	Ř	L	640	R
Depth	8	8	8	9	9	9	9	9	9
Depth @ MLLW					1	,	L	,	
Visibility		2-3			2-3				2-3
Boulder (%)			-						
Cobble (%)									
Gravel (%)			·				- 0		
Sand (%)	100	100	100	100	(06	100	001	100	COU
Mud(%)							_		
Eelgrass 2 o'clock	0	0	0	1/5	6	0		8	0
Eelgrass 6 o'clock	0	0	4	0	0	0	0	10	0
Eelgrass 10 o'clock	0	6	6	0	0	\circ	Q.	15	0
Algae(%) 2 o'clock	2	0	10	0	5	0		. 0	0
Algae(%) 6 o'clock	0			0	0	0	()	()	0
Algae(%) 10 o'clock	0	1	l	0	0	0	A	Ö	0
Dominant Algal			, t		alva		U		
Species:							·		
Goeduck	B			2	·			0	
Dungeness								<i>5</i>	
Starfish								6	
Fish			0		17.0			at-	
Other	1 ,			i.	2,2		•	(1)	
	San	bura	ves		2 5			35	
					20			# W	
					0				
	ulva	or en	1					1 1/2	
	on st	noll			. •			7	

King County Eelgrass Survey Data Form

[234, [238, 1239, 124]

		1750	< 1239	1243	124/	/			
Date: 7/23/03	Time:		,	Time:		1292			
1	L	660	R	L	, 680	R			-
Depth	9	9	9	9	9	9	. 12		
Depth @ MLLW		((,				
Visibility	2-3	2-3			2-3			· ·	,
Boulder (%)									
Cobble (%)									
Gravel (%)				4					
Sand (%)	100	[00]	100	100	100	100			
Mud(%)						\$			
Eelgrass 2 o'clock	000		\mathcal{O}	W Q	0	0			
Eelgrass 6 o'clock		0	0	2	0	0			
Eelgrass 10 o'clock	0	0	1.0	0	0	Q			
Algae(%) 2 o'clock	Q'	Q	0	00	0	U			
Algae(%) 6 o'clock	\mathcal{O}	0	0	\mathcal{L}	0	Q			
Algae(%) 10 o'clock	500	\square	5	0	0	ð			
Dominant Algal		-							
Species:	Mira		UM						
Goeduck	\bigcirc		04 1					·	
Dungeness	7		Shell						
Starfish			,		U2	9 8			
Fish			\triangle	0	7	\mathcal{I}			
Other				8	23				
				7	10.A	(
					25	2			
					~6	0			

King County Eelgrass Survey Data Form 1248 12.55 1253 1250 1252 Date: Time: 247 125 Time: Time 700 R 720 740 R 9 Depth 9. 9 9 Depth @ MLLW 2-3 Visibility 2-3 Boulder (%) Cobble (%) Gravel (%) (00 600 100 00 Sand (%) 100 00 100 Mud(%) Eelgrass 2 o'clock 0 0 0 0 0 Eelgrass 6 o'clock 0 Eelgrass 10 o'clock ि 0 Algae(%) 2 o'clock Algae(%) 6 o'clock Algae(%) 10 o'clock Dominant Algal Species: Goeduck Dungeness Starfish Fish Other

DG

Ring County Eelgrass Survey Data Form

1302 1309

<i>y</i> 0		King	County Eel	grass Surve	y Data Form	· ·			: 0	, [
	1303		1302	1309	7	1308	?		V151	']
Date: 7/23/03	Time:	1300	2	Time:	130	7	,			
<i>l</i> '	L	760	R	L	780	R		2] 1
Depth	9	a	9	10	9	9				
Depth @ MLLW		•	(,				
Visibility		2-3			2-3					
Boulder (%)									* .	
Cobble (%)										
Gravel (%)										
Sand (%)	100	100	100	100	100	100				
Mud(%)		C			~_	1				
Eelgrass 2 o'clock	8	Q	- O	0	0	0				
Eelgrass 6 o'clock		0	0	0	Ó	Û				
Eelgrass 10 o'clock	1 0	0	Q	0	Q	6)				
Algae(%) 2 o'clock	Q	0	Ø	0	Q	0				
Algae(%) 6 o'clock		_0	Ô	0	0	0				
Algae(%) 10 o'clock			()	0	0	n				
Dominant Algal			· -			U				
Species:								·		
Goeduck					Α,				`	
Dungeness					7					1
Starfish					12					
Fish	·				3					
Other April										l
					1 3					
					Du a					
·				i i	PN					
		_	W.							

feward Labs (se

Ring County Eelgrass Survey Data Form

		103	0		102	2		104	<i>O</i> .
Date: 7/23/03	Time:			Time:			Time		. 41 Mg
	L	800	R	L	820	R	<u>L</u>	840	R 🦠
Depth	6.5	615	6.5	フ	7,0	ク	7	7,0	フ
Depth @ MLLW					. '				
Visibility		4			4			U	
Boulder (%)					,			. /	
Cobble (%)									·
Gravel (%)					· · · · · · · · · · · · · · · · · · ·				
Sand (%)	100	100	100	100	100	100	100	100	100
Mud(%)									
Eelgrass 2 o'clock	\bigcirc	()	0	0			Q		16
Eelgrass 6 o'clock	2	0	Q	Ò	<u> </u>	0	Q	7	
Eelgrass 10 o'clock	(2)		\mathcal{O}	7	0			4	9
Algae(%) 2 o'clock								1	
Algae(%) 6 o'clock									
Algae(%) 10 o'clock			·			b		-	
Dominant Algal		PIBR			FIB			Tred	
Species:					<i>I</i>				
Goeduck									
Dungeness			Λ	+	1				
Starfish	gree	en L	lamen	lous	alque				
Fish		m	litter		/	1			
Other		309	<u></u>						
		,							

Richmond
King County Eelgrass Survey Data Form

	<i></i>			.4					_
Time:	1049)	Time:	1050			105	5	
L	860	R	L	880	R	6	900	R	
	7.5			8,0			8	,	
	y			4			4		
					,				
								·	
	100			100			100		
		,							
20	7,0	4	18	ZO	0	123	24	0	
7.0	(0)	1,2	16.	74	0	11	20	0	
20	6	8	18	ZI	0	14	18		
							0	10%	
					·			102	
	,							10%	
	(A)	,						ulva	
	USW	Thora	domina	ent a	lea			<u>-</u>	
0	->				V				
0-	->								
0-	Ś	A 1		•••					
Sma	U	Volles	isall						
					,				
				. 11	· · · · · · · · · · · · · · · · · · ·				ļ
	20 -	L 860 7.5 100 100 100 100 100 100 100 1	L 860 R 7.5 14 100 100 120 120 120 120 120	L 860 R L 7.5 100 100 100 18 7.0 1.2 16 70 8 8 8 8 8 8 8 8 8 8 8 8 8	L 860 R L 880 7.5 8.0 4 4 100 100 100 100 100 100 100	L 860 R L 880 R 7.5 8.0 14 4 100 100	L 860 R L 880 R L 7.5 8.0 100 100 100 100 100 100 100	L 860 R L 880 R L 900 25 8.0 8 4 4 4 4 4 4 4 4 4 4 4 6 10 20 20 20 20 20 20 20 20 20 20 20 20 20	L 860 R L 880 R L 900 R 7.5 8.3 8 4 4 4 4 100 100 100 100 100 100 12 14 24 0 12 20 0 102 10 12 14 24 0 12 20 0 102 102 102 102 102 102 102 102 102 102

no crab

colgrass 1-2 ft tall snoil casing - cochle shell moon snoil

10% alva where

King County Eelgrass Survey Data Form

					مذرب			· <i>j</i> -	
Date: 7/23/03	Time:	10	55	Time:	440		Time	945	,
/ 1/	L	900	R	Ļ	920	Ŗ	L	940	R
Depth	8	8	8	5	6	6	1 -6	6	4
Depth @ MLLW									
Visibility	4	4	4	13-5	3-5	3-5	3-5	3-5	3-5
Boulder (%)	·								***
Cobble (%)						·			
Gravel (%)				2)	\mathcal{I}	27			k
Sand (%)	100	100	100	100	100	100	100	100	10%
Mud(%)		•		l v			,	<i>'</i>	
Eelgrass 2 o'clock	20	24	. 0		0	$\left(\begin{array}{c} c \\ c \end{array} \right)$	20	#	Q
Eelgrass 6 o'clock		20	0	1 2			18	114.	Q
Eelgrass 10 o'clock	16	18	0		0		20	114	\bigcirc
Algae(%) 2 o'clock		-	10	10	<i>[</i> 0	10		0)D
Algae(%) 6 o'clock			10	10	10	1.0	0	0	17
Algae(%) 10 o'clock			10	10	10	10		8	10
Dominant Algal					0				
Species:			Ulla	1-11	LVH			LVA	. —
Goeduck					*		,		
Dungeness									
Starfish		-			•				
Fish			Ą						
Other						,			
		***************************************							,

Diver

King County Eelgrass Survey Data Form

Patchy celgrans

\vec{I}								1 1		~~
Date: 7/23/03	Time:	430)	Time:	J. W.	30]-
	L	960	Ŗ	L	980	R		7.7		
Depth	8	8	\$	5	8	8		/		
Depth @ MLLW						Ŭ		^] (
Visibility	3-5	35	3-5	35	3-5	3-5				<u>.</u>
Boulder (%))					
Cobble (%)										
Gravel (%)									,	
Sand (%)	100	100	100	100	100	100				
Mud(%)			1							
Eelgrass 2 o'clock	14	0	6		16	(6)				
Eelgrass 6 o'clock	1. ()	0.	8	Q	18	R				
Eelgrass 10 o'clock	10	0	4	0	16	13]
Algae(%) 2 o'clock	10	10	~	10		-				
Algae(%) 6 o'clock	10	10	·—'.	()	,					
Algae(%) 10 o'clock	10	10	 ,	10	-	-				
Dominant Algal	DLVA	ULH		JULYA						
Species:			·							
Goeduck	1				-	·				
Dungeness										1
Starfish							·			1
Fish				,]
Other				25		,]
£ ,]
		1								
			4							1

Kichmond King County Eelgrass Survey Data Form

King County Eelgrass Survey Data Form

KI TEHELS	1028	}	1024	1070			1043			
Date: 5/23/03	Time:	1020)	Time:	1030	1235	Time	1039	12041	
·	L	1000	R	L	1020	R	L	1040	R	outfall
Depth	9.0	9.0	9,0	() /	101	1 9	41	101	111	A
Depth @ MLLW				·						
Visibility	41	4	41	14-	4	4		Ĩ5		,
Boulder (%)	and the second	0	· Committee of the comm		0			-		1.81.02
Cobble (%)	· · · · · · · · · · · · · · · · · · ·	0	C		0					shove
Gravel (%)	and the contract of the contra	Ŏ	and the second		0				, i	
Sand (%)	**************************************	100	14 English and American	100	100	10.6	100	100	100	. •
Mud(%)	0		E	\bigcirc	C^{\prime}	0	0	0	0	
Eelgrass 2 o'clock	9	0	19	17	2	18	0	0	0	
Eelgrass 6 o'clock	0	2.	12	20	10	14	0.	O ₄	Q	
Eelgrass 10 o'clock	727	3	16	9	18	12		0	0	*
Algae(%) 2 o'clock	a			0/			Sa	く	Botter	
Algae(%) 6 o'clock								NO	algee	
Algae(%) 10 o'clock			9			0		S	1	
Dominant Algal			eelaw	,						
Species:										
Goeduck		0			gene	ally	· c/0	50/	0	,
Dungeness		0			bu	nch of	San	1 dal	5 (SA	peckle)
Starfish		(m)	\bigcirc		اط	revved/	small	ling	Cod	
Fish		2	3		cod-		1//5	o Liger	red	
Other										
		Λ								
		dy	Botto	r 1	hroug	hrout.	- ho	alga	P	
	oth	PV 7	Lan	5mit	hov q	on	celgy	455		*

King County Eelgrass Survey Data Form

			1055					
Time:	1048	1150	Time:	1053	1054	· ·		
L	1060	Ř	L	1080	R			
Q ,5	101	9,5	10	171	10			
LI	Ц	U	4	<u> </u>	4		Company of Party Services of Party Services Serv	
					·			
1.80	160	100	100	100	100			
	-				\ \			
0	0	Ø	0	0	0			
Ö	0	0	0		0			
0	0	0		0	0			
no	a/498	9						
only	Sm	i thoru	en	eel gr	155		,	
/								r
					ii			
					.*			
	1160 00 00	L 1060 9,5 101 L 4 110 150 0 0 0 0 0 0	L 1060 R 9,5 101 9,5 L1 4 4 1160 150 160 0 0 0 0 0 0 0 0 0 0 0 0	L 1060 R L 9,5 101 9,5 101 L 4 4 4 4 100 110 150 100 100 0 0 0 0 0 0 0 0 0 0 0 0 0 no a/498	L 1060 R L 1080 9,5 101 9,5 101 111 L1 4 4 4 4 1160 150 160 160 160 160 0 0 0 0 0 0 0 0 0 0 0 0 0 no a/qap	L 1060 R L 1080 R 9.5 101 915 10' 11' 10' 11 4 4 4 4 4 110 150 100 100 100 100 0 0 0 0 0 0 0 0 0 0 0	L 1060 R L 1080 R 9.5 101 9.5 10' 11' 10' 110 150 160 180 190 100 110 150 100 100 100 10 0 0 0 0 0 0 10 0 0 0	L 1060 R L 1080 R 9.5 101 9.5 10 11 10 10 10 10 10 100 100 100 100 1

Ring County Eelgrass Survey Data Form

	1/00	3		1105			1114		`. '.' *********************************	_
Date: 7/23/00	Time:	1057	109	Time:	1102	1104	Time	110.8	1111	
	L	1100	R	L	1120	R	L	1140	R	
Depth	9'	画の	d 9	91	Ø	9	1 100 6	101	10	,
Depth @ MLLW	·				,		The state of the s			
Visibility	4-									out
Boulder (%)	,									M
Cobble (%)								·		
Gravel (%)									,	
Sand (%)	100	100	100	100	100	100	100	100	100	Show
Mud(%)									/	(1140)
Eelgrass 2 o'clock	0	0	0	01	0	0	19	0	12	Garvers 5
Eelgrass 6 o'clock	0	0	0	OQ	<u> </u>	Ó	a		16	Starts
Eelgrass 10 o'clock	0	0	\triangle	0	0	0	17	6.	15	Brunnet Right and 151
Algae(%) 2 o'clock	0			.0		0	ia.			I Diverse
Algae(%) 6 o'clock				0e19,						097/51
Algae(%) 10 o'clock			0	<u>0</u> ~	6					
Dominant Algal				04					<u> </u>	To keF+
Species:				no		·				l kert
Goeduck				7						
Dungeness				Party Party						
Starfish		-		17,						
Fish										
Other		·					•			
					·] .
	5									
	<u> </u>									

Dominant Algal Species:

Goeduck Dungeness

Starfish Fish Other

Ring County Eelgrass Survey Data Form

			-	•				
	M25			1129	t			
Date: 7/23/03	Time:)/19	1123	Time:	112-7	7 1752		
	L	1160	R	L	1180	R		,
Depth	12) 1	101	11	1	\ [
Depth @ MLLW								
Visibility	4	4	Ч	U	4	4		
Boulder (%)								
Cobble (%)								
Gravel (%)								
Sand (%)	100	100	110	100	106	100		
Mud(%)								
Eelgrass 2 o'clock	٥	18	9	12	16	10		
Eelgrass 6 o'clock	15	15	16	8	12	G		
Eelgrass 10 o'clock	Ó	20	15	6	0	6		
Algae(%) 2 o'clock								
Algae(%) 6 o'clock		,			1.1			
Algae(%) 10 o'clock	onh	alg	ae is	sm	itho	ra		
		77					4	

Show

1

·	916			928			932			
Date: 7/23/03	Time:	09/	0 913	Time:	920	923	Time	929	931	
	L	1200	R	L	1220	R	L	1240	R	
Depth	9	8	8		1/	10	13	120	12	
Depth @ MLLW	, in the second	,								
Visibility	3	3	3	3	3	3	3-5	3-5	3-5	
Boulder (%)										
Cobble (%)						-	4			
Gravel (%)		700			,					1
Sand (%)	100	100	100	100	100	100	100	100	100	
Mud(%)				1				· ·		,
Eelgrass 2 o'clock	14	0	48	15	13.	15	0	0	0	eday
Eelgrass 6 o'clock	25	2	35	18	11	12	0	Ó	0-	
Eelgrass 10 o'clock	28	8	30	12	5	4	0	a	Q	ella
Algae(%) 2 o'clock	25	O GES	25	20	50	5	0	0	Û	Gran
Algae(%) 6 o'clock	25	° and	25	20	10	75	0	<i>ව</i>	0	
Algae(%) 10 o'clock	25	0	25	20	5	0	5	Orl	0	
Dominant Algal	UN	01	<u>.</u>	ulva	ram	UIC	ulva	4149	ulua	
Species:	5mi	hov	α			lam				-
Goeduck	0		1		0	\circ		0		Ì
Dungeness						Ĭ				(
Starfish										
Fish										/
Other /	¥									
Rock eval		Y			Chang shiftee					
						17.00				
	L	l					L].

Caminavio drifting as a clump on Bottom

		Kinç	ງ County Ee	lgrass Surve	y Data Form	05 N	off	net et e	÷ .
<i>h</i> .	93	5	•	943	940				
Date: 7/23/03	Time:	935	936	Time:	1 1	941			,
4	<u>L</u>	1260	R	l. L	1280	R			
Depth	124	13	13	15	15	115			
Depth @ MLLW			ı						
Visibility	·	3-5							
Boulder (%)				·					
Cobble (%)									
Gravel (%)									
Sand (%)	160	100	100	100	100	100			
Mud(%)	ζ.								
Eelgrass 2 o'clock	N	0	\sum_{i}	0	()	0			
Eelgrass 6 o'clock	10	0	0	0	0	0		<u>c</u> i	
Eelgrass 10 o'clock		0	0	0	0	0	J.		
Algae(%) 2 o'clock	0	Δ	(2)	V	0	0			
Algae(%) 6 o'clock	L Ö	7	Q	0	0	0			
Algae(%) 10 o'clock		7)	()	0	0	0		•	1
Dominant Algal		9				5			
Species:									
Goeduck	1	60	(2)	1	N				
Dungeness	7	4	1	4	7	1			
Starfish		1							
Fish		<i>(</i> *			/			-	
Other					1	ľ			
	1	<u> </u>				200		·	
		٠.							·
	<u> </u>								

Appendix B

Zone 6 Eelgrass Survey Datasheets

Outfall Zone 6, July 24, 2003 Datasheets

Transect Stops — 20-foot intervals along each transect from 0 to 460 feet.

Transects — 105 North (N), 80 N, 55 N, 30 N, 20 N, 10 N, 0, 10 South (S), 20 S, 30 S, 55 S, 80 S, 105 S. Shown as column headings on the datasheets.

Zone 6 Data Forms Parametrix project number

555.1521.045.02.07

	King C	Ave County Eelgra	Transect S	Stops			
Date: 7124	03		Transec	t# (40	South)
1							
	10	20	30	55	80	105	Transect
Time:	400	102	903	acol	9:06	908	
Depth	1+1	+1	+1	1+1	+1	+1	1
Depth @ MLLW							
Visibility		inter	tida/				
		Substrat	е				
Boulder (%)					10	10	
Cobble (%)					- 10	10	
Gravel (%)	75	75	75	80	-		Substrate Characteristics
Sand (%)	25	75	25	20	80	800	Characteriotics
Mud(%)				,			
		Eelgrass	/0.25 m2		,		
2 o'clock					40	48	Eelgrass
6 o'clock		_		40	48	48	Counts
10 o'clock	· · · · · · · · · · · · · · · · · · ·			56	40	48	
	Macro Al	gae Perc	ent Cove	r/0.25 m2	•		_
2 o'clock	40	50	40	50	10	70	
6 o'clock	JD	50	40	75	10	20	Algal
10 o'clock	40.	50	40	10	10	70	Counts
Dominant Algal					,		
Species:	UV	VV.	VV	W	VV	\cup	
		Invertebi	ates				_
Goeduck							
Dungeness							
	7						Organisms Observed
Starfish						ŕ	& Notes
Fish							
Other		Button					
		Clam					
							_

Date: 7/24/	103,		Transe	ct #	\bigcap λ	Voith	· .]
734		Transec	ct Stops					1
	0	10	20	30	55	80	105	1
Time:								1
Depth:	+2	+2	12	More	than	+7-11P	Ru in	to
Depth @ MLLW								1
Visibility		,	inter	tidal				1
	· · · · · · · · · · · · · · · · · · ·	Substra		<u> </u>				1
Boulder (%)								1
Cobble (%)						·	·	1
Gravel (%)	100	11)0	100	100			->	1
Sand (%)								1
Mud(%)	·				. ,			1
		Eelgras	s/0.25 r	n2 .				1
2 o'clock	_		_	_		_		1
6 o'clock			<u> </u>		-		-	1 '
10 o'clock		-	<u> </u>		Name of the last o		_	1
		Macro A	Algae Pe	ercent C	over/0.2	25 m2		1
2 o'clock	75%	75%	_					1
6 o'clock	11	11	*	the second secon		No. optioner in con-	And a control of	1
10 o'clock	1)	//		V.,	***********	##Electric		1.
Dominant Algal		11						
Species:		VU						
	V							
		Inverteb	rates	!·····································				
Goeduck			-					
·								
Dungeness								1
Starfish		l						1
			A					1
Fish	-							
Other			, , , , , , , , , , , , , , , , , , ,					1
			,]

Date:	ر داد	+103	Transect	# #	7 5.	1176					
Date: 724/03 Transect # 5 South Transect Stops											
	10	20	30	55	80	105					
Time:	915	915	916	916	9.17	918					
Depth	+	4)	+1	+1	+1	+1					
Depth @ MLLW	 										
Visibility	,	int	ertida.	/							
Substrate											
Boulder (%)	75	75	25	25	25	75,					
Cobble (%)											
Gravel (%)	65	65	65	65	15	15					
Sand (%)	10	10	10	10	10	10					
Mud(%)			,	. ,							
		Eelgrass	/0.25 m2								
2 o'clock											
6 o'clock		, married the latest t									
10 o'clock		-									
	Macro Al		ent Cover	/0.25 m2							
2 o'clock	75	75	75	75	75	75					
6 o'clock	75	75	75	75	75	75					
10 o'clock	75	75	75	25 _	75	75					
Dominant Algal	131		711/	,,,		4					
Species:			- Ent		UV	U 0					
	DVI.	FWD	*	上い	5nl	FUT					
		Invertebi	rates.								
Goeduck											
Dungeness											
Starfish						÷					
Fish											
Oth											
Other						* -					

Date: 7/24	103		Transe	ect #	20	North	
77.	1	Transe	ct Stops				
	0	10	20	30	55	80	105
Time:	800			804	ato		
Depth:	171	+1	+2	12	0,00		
Depth @ MLLW	• • • • • • • • • • • • • • • • • • •		12				
Visibility			inte	rtid	2/		
	<u> </u>	Substra			<u> </u>	<u> </u>	
Boulder (%)			5	5		· 1	
Cobble (%)							
Gravel (%)	100	. 95	90	90	100	100	100
Sand (%)	100	5	5	5			
Mud(%)							
		Eelgras	s/0.25 i	m2	,		
2 o'clock	_			T	-	<u></u>	
6 o'clock				_	<u> </u>		
10 o'clock						-	
		Macro /	Algae P	ercent C	over/0.2	25 m2	
2 o'clock	80	100	20	75		· <u> </u>	
6 o'clock	80	90	90	60			and the same
10 o'clock	75	90	75	800			
Dominant Algal		1.2			,		
Species:	UV	· UV	UV	1)//			
	5% PC	Pillata					
		Inverteb	orates				
Goeduck			·				
Dungeness							
·			·				
Starfish				·			-
Fish							
Other		•		Butter			
				Clam			
				·	·		

Date:	24/03	<u> </u>	Transect # 70' South					
/ /	1.1.	Transec		U		: :		
	10	- 20	30	55	80	105		
Time:	9 08	909	910	910.	9.11	912		
Depth	4-1	rl	+1	+1	+1	+1		
Depth @ MLLW								
Visibility		inter	rtida	/	4 -	·		
	i	Substrat						
Boulder (%)			25	25	75	15		
Cobble (%)					. 4			
Gravel (%)	90	80	65	65	60	ひ		
Sand (%)	io	20	10	10	15	50		
Mud(%)		<u> </u>						
	,	Eelgrass	/0.25 m2	`				
2 o'clock		A			12	11		
6 o'clock								
10 o'clock				1				
Macro Algae Percent Cover/0.25 m2								
2 o'clock	90	75	80	80	75	75		
6 o'clock	90	75	80	80	75	25		
10 o'clock	90	75	80	80	75	75		
Dominant Algal		,						
Species:	VV	VV	VV	UV	UV	UV		
		ENT	Ent.	Ent.	Ent	EWT		
		Inverteb	rates					
Goeduck								
				•				
Dungeness		4400 - 1 to 1						
Starfish						6		
	٠,							
Fish					-			
Other								
				`				

D . ==	1 / -		T			a /	1			
Date: 7/7	<u> 105</u>		Transe		40	Nort	4			
·	·.		ct Stops			1				
	0	10	20	30	. 55	80	105			
Time:	806		1	809		abou	12			
Depth:	41	+1	11	+2	+2		``			
Depth @ MLLW					1					
Visibility			linte	rtido	x/					
		Substra	ate			J				
Boulder (%)		70	20		20					
Cobble (%)	:	•								
Gravel (%)	90	70	70	90	70	100	100			
Sand (%)	10	10	10	10	10					
Mud(%)										
Eelgrass/0.25 m2										
2 o'clock		*****	188		·		· · ·			
6 o'clock	_									
10 o'clock	·	- Annex				_				
Macro Algae Percent Cover/0.25 m2										
2 o'clock	80	60	60	50	75		_			
6 o'clock	75	60	60	50	75					
	20	50	50	50	75					
Dominant Algal					,					
Species:	W	UV.	VV	W	W.					
<u> </u>	V		58 Papi	\	, ·					
	L	Invertel			<u>.</u>	<u> </u>				
Goeduck			1	<u> </u>	T T					
			<u>,</u>							
Dungeness										
Dangonooo										
Starfish			<u> </u>	<u> </u>						
Otamon										
Fish										
TION			<u> </u>							
Other			Butter		-					
Oute			4.9							
		 	Clams		<u> </u>	·				
					<u> </u>					

Detail 7/21/	67		Tunnant	11.	40				
Date: 7/W/	05	T.,,,,,,,,	Transect	#	40_	South			
	10	Transec		T. FF	00	105			
T:	10	907	30	55	80	105			
Time:	900	902	903	9:04	9:06	908			
Depth	+1	<u> </u>	+1	+1	+1	+1			
Depth @ MLLW		· · · · · · · · · · · · · · · · · · ·	, , , , ,						
Visibility			tida/		<u> </u>				
	<u> </u>	Substrat	e	· · · · · · · · · · · · · · · · · · ·					
Boulder (%)					10)	10			
Cobble (%)			·		10	10			
Gravel (%)	75	75 75	75	80	<u>'</u>				
Sand (%)	25	75	25	20	80	800			
Mud(%)				,					
Eelgrass/0.25 m2									
2 o'clock	A PROPERTY AND A PROP	enter.		_	90	48			
6 o'clock	~		Al Carterior	40	48	84			
10 o'clock	-77*HGQ		-	56	40	48			
Macro Algae Percent Cover/0.25 m2									
2 o'clock	40	50	40	50	10	20			
6 o'clock	OF	50	40	75	10	20			
10 o'clock	40,	50	40	10	10	70			
Dominant Algal	,				1				
Species:	VV	VV	VV	W	VV	1)V			
		***************************************		- 					
		Invertebr	ates	L:_	<u>. '</u>	<u> </u>			
Goeduck									
Dungeness									
Starfish						ę.			
Fish									
				·					
Other		, v 'A_							
		BITTO							
		1 Jam							
				,					
			*	L	l <u></u>				

Date:	1 V 10-	>	Transc	- H	10	1/-	-1/1		
Date.	<u> </u>	Transa	Transe		6)	Nor	Th		
	T 0		ct Stops			00	105		
Time	0	10	20	30	55	80	105		
Time:	8.10	8.15		820	822	8522	829		
Depth:	41	<u> </u>	+	111	+7	+2	+70		
Depth @ MLLW		<u> </u>	 	} , 	ļ		·		
Visibility	<u> </u>		ertia	9/	L	<u> </u>	L		
Davidor (0/)	1	Substra	ate	T & F	r :	1 3 5			
Boulder (%)		BC 1		15		10	0		
Cobble (%)	25	8 50		50	-	70	90		
Gravel (%)	50		15		5 95				
Sand (%)	50	50	25	29	45	60	10		
Mud(%)									
jα⊳. → Eelgrass/0.25 m2									
2 o'clock	60		3	10	98				
6 o'clock	90	105	10	10	76				
10 o'clock	60	50	10	65	96	46	A STATE OF THE PARTY OF THE PAR		
Macro Algae Percent Cover/0.25 m2									
2 o'clock	10	<i>5</i> 0	75	75	ID	75	75		
6 o'clock	10	10	75	75	75	75	75		
10 o'clock	10	75	75	25	10	10	75		
Dominant Algal	4		,						
Species:	VV	() V	UV	UV	UV	UV			
					-				
		Inverteb	orates'			,			
Goeduck			·						
					-				
Dungeness									
Starfish									
Fish					· .				
					R)				
Other		BHO	<u> </u>						
		Clair	< 15	05000	J 5R	itting			
		<u> </u>	3	- 36.45	 (/ 	1,100			
		4							
<u> </u>			l	L	L.:				

(/									
Date:	7124/	03	Transect	# 6	0 50	iuth				
	1.	Transec	t Stops							
	10	20	30	55	80	105				
Time:	1850	851	852	8:53	854	8 55				
Depth	1+1	+1	+1	+1	+/	+1.				
Depth @ MLLW		<u> </u>	<u> </u>			1				
Visibility		linte	rtida	<u> </u>						
		Substrat	te		-					
Boulder (%)										
Cobble (%)	90	90	25	90	90	10				
Gravel (%)										
Sand (%)	10	10	75	10	10	75				
Mud(%)				,						
Eelgrass/0.25 m2										
2 o'clock	*****	6	2	-	Name of Street, or other Designation of Street, or other Desig	80				
6 o'clock				6	-	80				
10 o'clock			1)	15	7-10-17-2	80				
Macro Algae Percent Cover/0.25 m2										
2 o'clock	90	80	25	90	80 80	25 25 25				
6 o'clock	90	えり	75	90	80	25				
10 o'clock	90	80	25	75	80	25				
Dominant Algal		4								
Species:	VI	UV	V(I	$\bigvee \bigvee$	VV					
		Inverteb	rates			÷				
Goeduck				-						
Dungeness										
					,					
Starfish						9.				
Fish										
Other			RIMO							
			Clam							
·				·						
	1	L	L							

Date: 717	24/03	· · · · · · · · · · · · · · · · · · ·	Tropos	<u>а+ 41</u>	00	Λ/	1		
Date.	09/03	`	Transe		80	Nor	-15		
	0	10	20	30	55	80	105		
Time:	830	232	834	836	840	242	8 44		
Depth:	0	0	001	0.30	00	8	0		
Depth @ MLLW			 	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			<u> </u>		
Visibility	5 mi	in	Fert	ida	/				
	<u> </u>	Substra		17 9//	<u> </u>	<u> </u>			
Boulder (%)			<u> </u>				10		
Cobble (%)	50	25	75	7.5		10	(1)		
Gravel (%)					20	1			
Sand (%)	50	75	25	75	80	40	30		
Mud(%)				,					
Jap → Eelgrass/0.25 m2									
2 o'clock	42	10	13	60		50			
6 o'clock	36	48	92	32		33			
10 o'clock	14	56	30	YR	48	46			
Macro Algae Percent Cover/0.25 m2									
2 o'clock	10	60	25	10	80	10	75		
6 o'clock	50	10	5	10	80	10	75		
10 o'clock	50	10	10	5	4810	20	75		
Dominant Algal	, , , ,	, , , ,							
Species:	VV	UV	UV	UV	\vee	UV	UV		
			`,		<u> </u>				
0. 1. 1		Inverteb	orates	·	ı				
Goeduck									
D									
Dungeness									
Ctartials									
Starfish									
Fish									
1 1011				: 					
Other									
Ouidi									
_									
			l		<u> </u>	<u> </u>			

Doto: 7/5	7/		Tuenest	ш Ол	1 1/	+1		
Date: 7/2	4/03	Transasi	Transect	# % (50	414		
	10	Transect			00	105		
Times	10	20	30	55	80	105		
Time:	8 45	846	8,48	8,50	852	8:54		
Depth C MILLW	D :	0	<u> </u>	<u>D</u> .	0	0		
Depth @ MLLW			1 , 1		<u> </u>			
Visibility		****	rtidal		·	<u> </u>		
D - 11 (0()	I ·	Substrat						
Boulder (%)		7 7 7	25					
Cobble (%)	75	10	30	25	20	25		
Gravel (%)					TIN			
Sand (%)	25	80	45	75	80	75		
Mud(%)			<u>.</u>					
	ap>		/0.25 m2					
2 o'clock	32	108	3	18	84	72		
6 o'clock	44	34	3	20	84	72		
10 o'clock	60	60	12	9	84	フレ		
Macro Algae Percent Cover/0.25 m2								
2 o'clock	75	10	20	50	10	7.0		
6 o'clock	80	5	.80	50	10	~20		
10 o'clock	50	10	75	75	10	20		
Dominant Algal						,		
Species:	W	VV	7	\cup	UV	UV		
		Invertebr	ates					
Goeduck						<u>.</u>		
Dungeness								
Starfish						ŝ		
Fish								
	a 4							
Other	Button							
	Clam	objei	rved	Spittin	9			
	-							

Date: 7/24	103		Transe	ot #	100	1/2	rth		
Date. // 25	105	Transoc			100	100	77		
	1 0:		ct Stops		55	80	105		
Time	0.	10	20	30	17112	1245	1249		
Time:	1/232	1235	1238	1240	1242				
Depth:	5	5	5	5		4	4.		
Depth @ MLLW	-	1					<u> </u>		
Visibility	<u> </u>	Ouls stus	<u> </u>				L		
D 11 (0/)	T	Substra	ite				I		
Boulder (%)			-			7			
Cobble (%)	<u> </u>					10	5		
Gravel (%)		,		, ,					
Sand (%)	100	100	100	190	100	90	95		
Mud(%)	<u> </u>			l '					
		Eelgras	s/0.25 r	n2					
2 o'clock	5	0.	8	21	52	45	0		
6 o'clock	6	6	フ	28	25	40	0		
10 o'clock	J.	0	0	35	44	26	10		
Macro Algae Percent Cover/0.25 m2									
2 o'clock	120	6	5	10	5	10	20		
6 o'clock	5	20	20	10	0	10	20		
10 o'clock	25	0	0	5	5	0	10		
Dominant Algal						,			
Species:	UNG	ulua	4/19	ulva	ulva	MIM	4/19		
	7		ent.						
		Inverteb							
Goeduck	1					* .			
Dungeness									
Starfish									
				·					
Fish									
Other									
		<u>L.</u>	<u> </u>	L	L	L			

	105		T=:	1770		7/			
Date: 7/20	1/03		Transect	# 106	1500	ith			
/	′ <i>/</i>	Transec				·			
	10	20	30	55	80	105			
Time:	1254	1259	100	102	106	108			
Depth	6	6	6	6	6	LB			
Depth @ MLLW									
Visibility									
		Substrat	te	÷					
Boulder (%)				·					
Cobble (%)	5	A. A.							
Gravel (%)				50	50	50			
Sand (%)	95	95	100	50	50	50			
Mud(%)									
		Eelgrass	s/0.25 m2	<u></u>					
2 o'clock	16	40	2/	5	60	6			
6 o'clock	27	15	7	1	42	12			
10 o'clock	27	30	70	4	38	22			
Macro Algae Percent Cover/0.25 m2									
2 o'clock	10	5	10	80	20	80			
6 o'clock	10	5	10	75	30	7			
10 o'clock	5	10	10	20	10	20			
Dominant Algal									
Species:	11/1/9	UIVa	4/1/9	uka	ula	alve			
		Inverteb	rates	<u> </u>	Laca en caración de la composição de la	L			
Goeduck									
Dungeness									
3									
Starfish									
						ė.			
Fish									
				<u> </u>					
Other		<u> </u>							
0 1101									
						 			
<u> </u>				<u> </u>					

Date: 7/29	1/0.2		Transe	ot #	20	North	1			
Date.	9/03	Transa			20	10001				
	T 0:		ct Stops			00	105			
T:	1/3	10	20	30	55 120	122	105			
Time:	115	115	11/4	119	120	150	105			
Depth:	0		0	-6-	0	6	6			
Depth @ MLLW							,			
Visibility			<u> </u>	<u> </u>						
		Substra	ite	1	·	·				
Boulder (%)										
Cobble (%)		·					25			
Gravel (%)						A				
Sand (%)	100	100	ICI	100	100	190	75			
Mud(%)			<u> </u>	<i>!</i>						
Eelgrass/0.25 m2										
2 o'clock	0	15	0	21	1/		0			
6 o'clock	B	60	0	13	6	<u>Q</u>	0			
10 o'clock	/	45	0	11	0	0				
Macro Algae Percent Cover/0.25 m2										
2 o'clock	0	20	()	5	0	0	20			
6 o'clock	10	10	0	0	8)	0	20			
10 o'clock	0	10:	7)	5	0	\bigcirc	20			
Dominant Algal										
Species:	WING	WVa		ulvo			4/14			
		JOU				/				
		Invertel	orates		,	,				
Goeduck										
Dungeness	, , , , ,									
Starfish										
							·			
Fish										
			†							
Other										
L	<u> </u>				<u> </u>	<u> </u>	<u></u>			

Date: 7/24/03				Transect # 120 South					
1	Transec								
10	20	30	55	80	105				
130	/31	132	134	136	137				
7	7	7	179	7	8				
7/	*								
	Substrat	е	,						
20		·		50	50				
					·				
80	100	100	100	50	50				
			(
	Eelgrass	s/0.25 m2							
36	5	0	60	50	0				
12	5	5	35	60	50				
15	30	3	25	6.5	10				
10 o'clock									
10	5	5	5	5	25				
20	5	5	5	5	- 5				
10	5	5	10	5	30				
Ulla	ulva		ulva	ulva.	70000				
mats				mari	54)				
19	Inverteb	rates			and the same of th				
					·				
					"Mag _{raph}				
				. •	*				
	-								
	_ :								
	36 12 13 80 36 12 15 Macro Al 10 20 10	10 20	Transect Stops 10 20 30 130 /3) /32 7 7 7 Substrate Eelgrass/0.25 m2 20 3 Macro Algae Percent Cover 10 5 5 20 5 5 10 5 5 Uluq uluq mats	Transect Stops 10 20 30 55 130 /3) /32 /34 7 7 7 Substrate Eelgrass/0.25 m2 20 3 25 Macro Algae Percent Cover/0.25 m2 10 5 5 5 10 5 5 5 10 5 5 5 10 100 Ulua ulua ulua ulua mats	Transect Stops 10				

Date: 7/2	4/03		Transe	ct #	140 1	Vorth				
Dato.	4/03		ct Stops		901	1001-)			
	0	10	20	30	55	80	105			
Time:	154	156	158	159	200	203	204			
Depth:	6	0	12	0	7	T-many	7			
Depth @ MLLW			19	0.		-	1			
Visibility										
Substrate										
Boulder (%)						-				
Cobble (%)										
Gravel (%)						10				
Sand (%)	100	100	100	100	100	40	100			
Mud(%)					ŧ.					
		Eelgras	s/0.25 r	n2						
2 o'clock	***************************************	d	//	12	15	3	0			
6 o'clock		0	10	25	91	74	0			
10 o'clock	- The state of the	0	0	55	4.5	()	23			
		Macro /	Algae Pe	ercent C	cover/0.2	25 m2 *	~			
2 o'clock		0	5	0	5	15	0			
6 o'clock	· ·	0	Ô	0	5	20	0			
10 o'clock	-	0	0	5	0	15	20			
Dominant Algal				ulva	ula	ulia	ulie			
Species:		Wat?	Marin	9		ent				
	Υ	Invertel	orates	·	·	,				
Goeduck										
Dungeness						· · · · · · · · · · · · · · · · · · ·				
Starfish										
Fish										
Other										
		·								
							<u> </u>			

D 1517	/		T	11/0		1				
Date: $7/24/$	03	-	Transect	# 140	Sout	5				
	T*	Transec								
	10	20	30	55	80	105				
Time:	202	2.11	215	215	216	218				
Depth		8	R	8	- Z	8				
Depth @ MLLW					0					
Visibility										
*		Substrat	е							
Boulder (%)										
Cobble (%)	5		5		25	50				
Gravel (%)										
Sand (%)	95	100	90	100	The second	50				
Mud(%)				t						
		Eelgrass	/0.25 m2							
2 o'clock	5	47	0	86	56	32				
6 o'clock	35	15	0	55	48	27				
10 o'clock	14	48	0	7	75	15				
Macro Algae Percent Cover/0.25 m2										
2 o'clock	25	10	0	10	5	20				
6 o'clock	5	10	0	10	10	20				
10 o'clock	3	10	1)	10	5	20				
Dominant Algal										
Species:	4/04									
		Inverteb	rates							
Goeduck										
Dungeness										
Starfish						÷.				
Fish										
Other										
	•		h							

Date: 7/2 4	1/03		Transe	nt # /	10	Vorth			
Dato.	()	Transec	ct Stops	Je n j		DOVI			
	0	10	20	30	55	80	105		
Time:	17.21)						1240		
Depth:	100	5	5	5	,	5	5		
Depth @ MLLW					-				
Visibility	5-6			· · · · · · · · · · · · · · · · · · ·			5-6		
Substrate									
Boulder (%)									
Cobble (%)									
Gravel (%)			-						
Sand (%)	100	100	100	100	100	100	100		
Mud(%)	100								
		Eelgras	s/0.25 n	12					
2 o'clock		-			-7		_		
6 o'clock					12	· · · · · · · · · · · · · · · · · · ·	· ·		
10 o'clock		-	Nagard St. St.		18	2000			
		Macro A	Algae Pe	ercent C	over/0.2	.5 m2 *			
2 o'clock	75	Senesot?	Williams.	*****		10	20		
6 o'clock			-	-	10	70	26		
10 o'clock	-	20		-	10	20	20		
Dominant Algal						12	1		
Species:	DV	01/9			1/1/9	01/9	Wa		
			·	······································					
		Inverteb	prates		·	T	·		
Goeduck									
Dungeness									
							ļ		
Starfish									
part ,							-		
Fish							-		
Oth									
Other									
							<u> </u>		

Date: 7/24	103		Transect	# 16	0 Soc	. +1
Date. //29/	<i>'</i> ''	Transaci		# 10) 300	(14:
	10	Transec			90	105
Timo	10	20	30	55	80	105
Time:	1:00				1255	1600
Depth Depth	5	5	5	5	9	5
Depth @ MLLW					- /	-
Visibility		<u> </u>			3-6	5-6
D 11 (6()		Substrat	e	T****	T	
Boulder (%)						
Cobble (%)						
Gravel (%)						
Sand (%)	100	100	100	100	100	100
Mud(%)						
		Eelgrass	/0.25 m2	<u> </u>		
2 o'clock	12	20	30		40	72
6 o'clock	10	30	7.4	10	40	77
10 o'clock	ルー	12		<u></u>	70	72
	Macro Alo	gae Perc	ent Cover	/0.25 m2	નું	
2 o'clock	15	多 (8	10	10	20	5
6 o'clock	20	E)C	5 -	25	ひ	5
10 o'clock	15	The state of the s			20	5
Dominant Algal				,		
Species:		1217	Ver	VV	VU	VV
						Ĭ
		Invertebi	rates			
Goeduck						
Dungeness						
Starfish						è
Fish						
Other						
			•			
						·

Date: 7/24	103		Troppo	ot #	180	Λ / <u>.</u>	1		
Date. //29	103	Tropos	Transe		100	Nort	5		
	0.	Transec			FF	00	105		
—	0	10	20	30	55	80	105		
Time:	10/	102	103	103	105	106	10/		
Depth:	9		5			5	5		
Depth @ MLLW									
Visibility	5-1						5-6		
		Substra	te			,			
Boulder (%)									
Cobble (%)									
Gravel (%)									
Sand (%)	100	100	100	100	100	100	100		
Mud(%)									
		Eelgras	s/0.25 r	n2					
2 o'clock	<u>ب</u>					Mark Town			
6 o'clock	delicens				<u> </u>	parent.			
10 o'clock	8	_			14	Manager			
Macro Algae Percent Cover/0.25 m2									
2 o'clock	10	10	10	10	10	10	40		
6 o'clock	10	11)	ig	17	10	20	40		
10 o'clock	10	10	10	110	10	70	40		
Dominant Algal	"	,,_	1 -	9 840			10		
Species:	1.)\/		UV	W	111	VV	7/		
орожо.	0 0						10		
		Inverteb	orates		l	L			
Goeduck		111401102	raioo						
Goodaok									
Dungeness									
Durigeriess									
Starfish									
Otarrish							 		
Fish									
1 1011									
Othor									
Other									
							<u> </u>		
					<u></u>		<u> </u>		

/	/					
Date: 7/24/	03		Transect	# 18	<u> 500</u>	ith
(/		Transect	Stops	principal de la companya de la comp		
	10	20	30	55	80	105
Time:	1.22			a village de la companya de la compa		115
Depth	6	6	6	6	6	0
Depth @ MLLW						
Visibility	5-6	56	5-6	5-6	576	5-6
		Substrat	е			3
Boulder (%)						
Cobble (%)						
Gravel (%)			5.	• •		
Sand (%)	100	100	95	100	100	100
Mud(%)						
		Eelgrass	/0.25 m2			
2 o'clock	b	70	_	_	~	-
6 o'clock	7	20		Comme		****
10 o'clock	13	70	-	6		and the same of th
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Macro Al	gae Perc	ent Cover	/0.25 m2	ર્ચ	
2 o'clock	10	20	17)	-		
6 o'clock	10	20	10		(
10 o'clock	(5)	70	10	20	10	
Dominant Algal		/	1	-		
Species:	\bigcirc	1)V	VV	UV	- h/	
					UV	
		Invertebr	ates			
Goeduck						
Dungeness						
,						
Starfish				1		ė.
Fish						
Other						

Date: 7/24	/03		Transe	ot #	200	\ /a	+1
Date. //29	103	Transac			200	100	r th
	1 0	Transec				- 00	100
-	0	10	20	30	55	80	105
Time:	16						30
Depth:	1	6	6	6	-6	6	6
Depth @ MLLW							,
Visibility	50						5-6
		Substra	te				
Boulder (%)							
Cobble (%)							
Gravel (%)							5
Sand (%)	100	100	100	100	100	100	950
Mud(%)	19						1
		Eelgras	s/0.25 r	n2		L 	
2 o'clock			Marin.	State of Co.	**Politicess	Marine	
6 o'clock	`anama						
10 o'clock	-				\		
		Macro A	Ilgae Pe	ercent C	over/0.2	5 m2	
2 o'clock	1000	10		· Margaria	10	10	20
6 o'clock		10	-		10	21)	20
10 o'clock	<u></u>	10			10	70	7/)
Dominant Algal			· · · · · · · · · · · · · · · · · · ·		μ Ψ		
Species:					1)1		1111
		<u> </u>				<u> </u>	<u> </u>
		Inverteb	rates			<u></u>	
Goeduck		IIIV CITICA	raics				
Gooddox							
Dungeness							
Durigeriess							
Starfish							
Starrish							
Fish							
1 1311							
Othor							
Other							

·			·			
Date: 7/24	1/03		Transect	# 200	7 50u	+4
	1	Transect	t Stops			
	10_	20	30	55	80	,105
Time:	143	142	14/	140	138	137
Depth	16	6	6	6	b	6
Depth @ MLLW						
Visibility	5-6	5-6	5-6	5-6	5-6	~-6
		Substrat				5
Boulder (%)						
Cobble (%)						
Gravel (%)						
Sand (%)	100	100	100	100	100	100
Mud(%)	100	100	100	100	100	100
Widd(70)	L	Felorass	s/0.25 m2	<u> </u>		<u> </u>
2 o'élock	Z		, 5.25 1112	-		
6 o'clock	9					<u> </u>
10 o'clock		->		1	10	
10 0 0100K	Macro Al	gao Porc	ent Cover	$\frac{1}{10.25}$ m ²	10	
2 o'clock		yae reic	/ O	1/)		10
6 o'clock	20	<u> </u>	10	10		
terre a committee and a commit		- /		10		
10 o'clock				10	70	
Dominant Algal	<u> </u>		115	112	A 137	1/1/
Species:	UV		UV	UV	V	
		[<u> </u>	L\
		Inverteb	rates.		I	<u> </u>
Goeduck						
) ·					
Dungeness	·					
	\					
Starfish						ů.
Fish						
Other						
						<u></u>

Date: 7/2"	1/0.3		Transe	ct # 2	20-	- 380	2 1/0
7/2	1703	Transec				300	700
	0	10	20	30	55	80	105
Time:							100
Depth:							
Depth @ MLLW							
Visibility							
		Substra	te		L		<u> </u>
Boulder (%)							
Cobble (%)							
Gravel (%)							
Sand (%)	100	100	100	100	100	100	100
Mud(%)							
		Eelgras	s/0.25 r	n2			
2 o'clock		10		rass	in	area	
6 o'clock							
10 o'clock							
		Macro A	Algae Po	ercent C	over/0.	25 m2	
2 o'clock		NO	alga		n	area	
6 o'clock							
10 o'clock							
Dominant Algal							
Species:							
		Inverteb	rates				
Goeduck							
Dungeness							
·							
Starfish							
Fish							
							,
Other							

Date: 7/	24/02		Transect	# 220	- 28	
7	27/05	Transec	t Stons	" 220	- 500	2 300
	10	20	30	55	80	105
Time:			00		- 00	100
Depth						
Depth @ MLLW						
Visibility						
	<u> </u>	Substrat	E	L	L	
Boulder (%)				T .		
Cobble (%)						
Gravel (%)						
Sand (%)	100	100	100	100	100	100
Mud(%)	' ' ' '	700	700	/ -	700	700
		Eelgrass	s/0.25 m2	<u> </u>		
2 o'clock			elara	55 in	are	9
6 o'clock		,,,	7		47	
10 o'clock						
	Macro Al	gae Perc	ent Cover	/0.25 m2		L
2 o'clock		10 0	1/990	in	ave	2/
6 o'clock		7	1			
10 o'clock			-i			
Dominant Algal						
Species:						
		·				
		Invertebi	rates	<u> </u>	416 (19 pt 1 to 4 pt - 4 pt	
Goeduck				·.		
Dungeness						
					•	
Starfish						
Fish						
Other						
	7.					

Date: 7/29	1/27		Transe	ot #	400	1/2	+1
Butc. / 2 9	1	Transoc	ct Stops		400	11/0	
	0	10	20	30	55	80	105
Time:	100 8	1036	1037	1038		1040	1041
Depth:	100	4030	. 6	11	7037	>	2
Depth @ MLLW	7	. (-/				3
Visibility	\sqrt{\sqrt{\sqrt{\chi}}}						5
	<u> </u>	Substra	te			<u> </u>	
Boulder (%)							
Cobble (%)							
Gravel (%)				5	5		
Sand (%)	100	100	100	95	95	100	100
Mud(%)					· V		1
		Eelgras	s/0.25 r	n2			
2 o'clock	***************************************	Ĺ	1)	(1	-
6 o'clock			1		-	1	
10 o'clock		_		_	2	,	
		Macro A	Algae Pe	ercent C	over/0.2	25 m2 🕝	
2 o'clock							10
6 o'clock					_	_	***
10 o'clock							
Dominant Algal							
Species:				,			UV
		Inverteb	rates			T	
Goeduck	- 1	· 1	<u> </u>	1			
D	//	0141	4	005.	صراما	0	
Dungeness	,		/				
Ctorfiele							
Starfish		, , , , , ,				,	
Fish	7	- 1-1	e d		1	165	
11911	3		-	5aha	02)	
Other	V	1 h	A	-69			
Other							
· · · · · · · · · · · · · · · · · · ·							
<u> </u>					L	<u> </u>	

D. I.	7 =		T= .	1260		- , ,
Date: 7/24/	103		Transect	# 4 4	0 50	uth
/ /		Transect		r — — — — — — — — — — — — — — — — — — —	T	
	10	20	30	55	80	105
Time:	1550	1051	1052	1053	1054	1055
Depth	4	4	Ч	4	4	4
Depth @ MLLW						/
Visibility	5-7					5-7
		Substrat	е			
Boulder (%)						
Cobble (%)						
Gravel (%)						
Sand (%)	100	100	100	100	100	100
Mud(%)						
	· · · · · · · · · · · · · · · · · · ·	Eelgrass	/0.25 m2			
2 o'clock)			
6 o'clock	-		_		_	
10 o'clock						
	Macro Ale	gae Perc	ent Cover	/0.25 m2	*	
2 o'clock						~
6 o'clock	ب)			
10 o'clock	~~~					
Dominant Algal						
Species:						
		Invertebr	ates			
Goeduck						,
Dungeness						
Starfish						
						6
Fish		, , , , , , , , , , , , , , , , , , ,				
Other						
3 4101						
			· · · · · · · · · · · · · · · · · · ·		,	

Date: 7/2	4/03		Transe	ct#	120	Nor	74
7	1/0)		ct Stops		1 / 10	, , , ,	<u> </u>
	0	10	20	30	55	80	105
Time:	1055	1056	1057	1057	1058	1059	1100
Depth:	5	35	4	4	y	3	3
Depth @ MLLW						ميد	
Visibility	5-7						5.7
	1	Substra	te			<u></u>	
Boulder (%)							
Cobble (%)	·	-					
Gravel (%)							
Sand (%)	100	100	100	100	100	100	100
Mud(%)							
		Eelgras	s/0.25 r	n2			
2 o'clock			-				
6 o'clock		<u> </u>	Secretary.	Pertochem «	inachaephrichro		-
10 o'clock		<u></u>					~
		Macro A	Algae Pe	ercent C	over/0.2	25 m2 =	
2 o'clock	_					· .	
6 o'clock		~	_				
10 o'clock					·		
Dominant Algal							
Species:				,			
					·		
		Inverteb	rates				
Goeduck		lenti		5ma	11 SP	eclele	0
	5	anda	a b 5	obse	erved	-the	oughou
Dungeness		Pa					
		ı					
Starfish							
Fish							
Other							
			,				
		,					

5	11/ 0		Tuesee	# 42	\sim	الد
Date: 7/2	4/03		Transect	# 4/	<u> </u>	outh
		Transect				105
	10	20	30	55	80	105
Time:	11.01	1102	1103	1104	1105	400
Depth	4	4	4	4	4	4
Depth @ MLLW						
Visibility	5-7					5-7
·		Substrat	<u>e</u>			
Boulder (%)						
Cobble (%)	·					
Gravel (%)						
Sand (%)	100	100	100	100.	100	100
Mud(%)						
		Eelgrass	/0.25 m2			
2 o'clock			-		j	
6 o'clock		p	Ç	general/hh-		-0.00
10 o'clock						
	Macro Al	gae Perc	ent Cover	/0.25 m2		
2 o'clock	6		10		1	
6 o'clock					(December)	-
10 o'clock	hame.					
Dominant Algal						
Species:						
		Inverteb	rates			
Goeduck						
Dungeness						
Starfish						a
<u>J.a</u>						
Fish						
		1	-			
Other		 				
		/	\\ <u></u>			
				<u> </u>		
	1					
L		L		<u> </u>		

Date: 2/2	-/-		T	- L 11 /	1116	1/-	
Date: 7/24	1/03		Transe		140	Wor	12
	т -	Transec			r		
	0	10	20	30	55	80	105
Time:	1110	1110	1/11	1112	1113	1114	11/5
Depth:	5	5	5	J	4	4	Ч
Depth @ MLLW							
Visibility	5-7						5-7
	· ·	Substra	te				
Boulder (%)							
Cobble (%)							
Gravel (%)					5	5	
Sand (%)	100	100	100	100	95	95	100
Mud(%)		· · · · · · · · · · · · · · · · · · ·					
		Eelgras	s/0.25 r	n2		•	
2 o'clock	Fac(200)			-			-
6 o'clock							
10 o'clock		٤				_	
		Macro A	Algae Pe	ercent C	over/0.2	5 m2	
2 o'clock				5			
6 o'clock	_		_	3/		_	
10 o'clock							
Dominant Algal		·					
Species:				Tist			
				V V			
	<u> </u>	Inverteb	orates		<u></u>	<u> </u>	L
Goeduck		111101102	74100				
Gooddox							
Dungeness							·
Dangonooo							
Starfish							
Otariisii						. 1	
Fish	5mal	1	eckl	200	-10-1	dos	
1 1311	1	SOV	00		and)
Other	05	5000	U	1 1	1100	<u> </u>	
Oute							
		1			<u></u> .	L	<u> </u>

4/-2		Tueneed	ш 1111	6	DI I
3 /03 \	Transact		# 44	0 30	4/5
10			I		105
	20	30	I		105
11,10	1116	1117		11/9	1160
1-5-	6	6	6	6	6
				·	
LS~)_					5-1
, 	Substrat	e	r		
		·			
100	100	100	100	100	100
	Eelgrass	/0.25 m2	<u> </u>	,	
				-	_
	_	*****	•	*****	$\overline{}$
			L		
Macro Al	gae Perc	ent Cover	/0.25 m2		
¬	-	-	4000		
-		All Marines,	garage.	Allegation	
	and the same of th			***************************************	
				/	
<u> </u>	Invertebr	ratos			
				,	
90	1.7.21	1		1	
710	1 x rig	· UDS	70000		
	/				
					· &
	1-/-		1		
pec	Kled	Sar	d da	65	
	. ,				
·		_			
			-		
	no	Substrat Substrat DO 100 Eelgrass	Transect Stops 10, 20 30 1116 1117 Substrate Substrate Eelgrass/0.25 m2 Macro Algae Percent Cover Invertebrates notking observed	Transect Stops 10, 20 30 55 11, 6 1116 1117 1/18 Substrate 100 100 100 100 Eelgrass/0.25 m2 Macro Algae Percent Cover/0.25 m2 Invertebrates Nothing Observed	Transect Stops 10

/							
Date: 7/24	103		Transe		460	A	20x14
	1037	Transe	ct Stops				
	0	10	20	30	55	80	105
Time:	1633	1036	1837	1038	1040	1001	1042
Depth:	5						
Depth @ MLLW		l.					
Visibility	6	4	6	6	2	5	5
		Substra		v.jp.:			
Boulder (%)		, ,					·
Cobble (%)							
Gravel (%)							
Sand (%)	100	1001	100	100	100	100	100
Mud(%)							
		Eelgras	s/0.25 r	n2			
2 o'clock	0	9	P	9	P	0	0
6 o'clock		100				·	
10 o'clock						-	
		Macro A	Algae Pe	ercent C	Cover/0.2	5 m2	
2 o'clock	·						
6 o'clock							
10 o'clock							
Dominant Algal							
Species:							
		Inverteb	orates				,
Goeduck							
·				-			
Dungeness							
Starfish							
Fish			1 Sand Rod) /			
Other							
	-						
	L		L	L		L	ــــــــــــــــــــــــــــــــــــــ

Date: 7/24	107	•	Transect	#/.	<u> </u>	<i>+</i>)
Date.	192	Transec		# 460		outh
	10	20	30	55	80	105
Time:	 	1048		 		105
Depth —	1046		1049	1050	1092	- 1954
Depth @ MLLW		6	<u> </u>	6		10
Visibility	ļ					
Visibility	<u> </u>	Substrat				
Boulder (%)	ſ	Jubalial			· · · · · · · · · · · · · · · · · · ·	
Cobble (%)						
Gravel (%)						
Sand (%)	100	1.0	1/00	100		
Mud(%)	100	100	160	100	400	10/
ivida(/6)		Folgrace	/0.25 m2	<u> </u>		
2 o'clock		© Eeigrass	/U.23 IIIZ		0	
6 o'clock	7	7		P		\mathcal{A}
10 o'clock			<u> </u>			
TO O CIOCK	L	goo Doro	ont Cover	/0 0F m0		
2 o'clock	Macro Ar	yae Feic	ent Cover	/0.25 M2		
6 o'clock						
10 o'clock		,				
Dominant Algal						
Species:						
Species.						
		Invortob	rotoo		<u> </u>	
Goeduck		Invertebr	ales	[·]	· I	
Goeduck						
Dunganasa						
Dungeness						
Ctartiah						
Starfish						è
Eigh			·			
Fish						
Other /						
Other '						
				<u> </u>		
	,					

	- - -		, 				
Date: 7/2	4/05		Transe		180	1/04	<u>- th</u>
/ `	,	1	ct Stops		·		
	0.	10	20	30	55	80	105
Time:	1057	1059	100	1101	1162	1103	1109
Depth:	1'-7(:	71	- 1	7	ر آ	6	6
Depth @ MLLW							
Visibility							
		Substra	ite				
Boulder (%)							
Cobble (%)							
Gravel (%)							
Sand (%)	106	100	100	100	100	100	1100
Mud(%)							
		Eelgras	s/0.25 n	n2	<u>L </u>	•	
2 o'clock				,			
6 o'clock		no	ee	lar	955		
10 o'clock				1			
		Macro A	Algae Pe	ercent C	over/0.2	25 m2 *	
2 o'clock							
6 o'clock						,	
10 o'clock		NO	a	999			
Dominant Algal			,	7			
Species:							
		· · · · · · · · · · · · · · · · · · ·					· · · · · · · · · · · · · · · · · · ·
	•	Inverteb	rates				
Goeduck							
Dungeness							
Starfish							Ì
Fish							
Other							

Transect Stops 10 20 30 55 80 Time: NOT NOS NOT 1110 NULL Depth Depth Depth MLLW	105 1113 291
10 20 30 55 80 Time:	1113 291
Time: Depth Depth Depth @ MLLW Visibility Substrate Boulder (%) Cobble (%) Gravel (%) Sand (%) Mud(%) Eelgrass/0.25 m2 2 o'clock 6 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock Dominant Algal	1113 291
Depth @ MLLW Visibility Substrate Boulder (%) Cobble (%) Gravel (%) Sand (%) Mud(%) Eelgrass/0.25 m2 2 o'clock 6 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock Macro Algae Percent Cover/0.25 m2	291
Depth @ MLLW Visibility Substrate Boulder (%) Cobble (%) Gravel (%) Sand (%) Mud(%) Eelgrass/0.25 m2 2 o'clock 6 o'clock 10 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock No algae Percent Dominant Algal	6
Visibility Substrate Boulder (%) Cobble (%) Gravel (%) Sand (%) Mud(%) Eelgrass/0.25 m2 2 o'clock 6 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock No eel avass 10 o'clock Macro Algae Percent Cover/0.25 m2	
Substrate Boulder (%) Cobble (%) Gravel (%) Sand (%) Mud(%) Eelgrass/0.25 m2 2 o'clock 6 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock Macro Algae Percent Cover/0.25 m2	
Boulder (%) Cobble (%) Gravel (%) Sand (%) 100 1	100
Cobble (%) Gravel (%) Sand (%) 100	100
Gravel (%) Sand (%) 100	106
Sand (%) Mud(%) Eelgrass/0.25 m2 2 o'clock 6 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock 10 o'clock Dominant Algal	100
Mud(%) Eelgrass/0.25 m2 2 o'clock 6 o'clock No eel qrass 10 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock 10 o'clock No algae Dominant Algal	100
Eelgrass/0.25 m2 2 o'clock 6 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock 10 o'clock Dominant Algal	
2 o'clock 6 o'clock No Pel grass 10 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock 10 o'clock Dominant Algal	
2 o'clock 6 o'clock No Pel grass 10 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock 10 o'clock Dominant Algal	
10 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock 10 o'clock Dominant Algal	
10 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock 6 o'clock 10 o'clock Dominant Algal	
2 o'clock 6 o'clock 10 o'clock Dominant Algal	
6 o'clock 10 o'clock No algae Dominant Algal	
10 o'clock no a g a e Dominant Algal	
Dominant Algal	
Dominant Algal	
Invertebrates	
Goeduck	
Dungeness	
Starfish	ŧ
Fish	
Other	

Date: 7/24/	0.2		Transe	ct #	00	Λ/a	-72
241		Transec	ct Stops		300	1 00	, . ,
	0	10	20	30	55	80	105
Time:	1010	SWI	11.79	1120	1121	1122	1123
Depth:		91	91	9.1	9	91	On
Depth @ MLLW						, , , , , , , , , , , , , , , , , , , ,	
Visibility	71	. 70	-71	71	71	71	7/
		Substra	ite	<u> </u>	<u> </u>	Y 2	
Boulder (%)							
Cobble (%)	r						
Gravel (%)							
Sand (%)	100	100	100	100	120	661	100
Mud(%)							
		Eelgras	s/0.25 r	n2			
2 o'clock							
6 o'clock			non	Q			
10 o'clock							
		Macro A	Algae Pe	ercent C	over/0.2	25 m2 🌁	
2 o'clock							
6 o'clock							
10 o'clock			non	0			
Dominant Algal							
Species:				,			
		Inverteb	orates				
Goeduck							
Dungeness							
0. 0.1							
Starfish							
— ,							
Fish							
Other							
Other							

Date: 7/2#	103		Transect	# 50	0 50	outh
1/34/	2.17	Transect	<u> </u>			
	10	20	30	55	80	105
Time:	1124	1125	1126	127	1128	1120
Depth	74	9	9	910	151	251
Depth @ MLLW						
Visibility	March reports	- cofee	7	especial services and the services and the services are se	~	7
		Substrat	е			
Boulder (%)						
Cobble (%)						
Gravel (%)		·				
Sand (%)	100	100	100	100	100	100
Mud(%)	,	1				
		Eelgrass	/0.25 m2			
2 o'clock		ž	,			
6 o'clock	~	NE	one			
10 o'clock						
	Macro Al	gae Perc	ent Cover	/0.25 m2	٠	
2 o'clock		- Andrews				-
6 o'clock						
10 o'clock		no	ne			
Dominant Algal						
Species:	y	4	· ·	1		
		Invertebr	rates			
Goeduck						
				·		
Dungeness						
Starfish						, Pa
Fish						
Other				Ì		
	÷					
	.*					

Date: >/24/	03:		Transe	ct # 5	-20	Novt	1
1. 1	 	Transec					
	0	10	20	30	55	80	,105
Time:	1130	1150		1151	1151	1152	115.2
Depth:	11	11	11	10	10	10	10
Depth @ MLLW		F					
Visibility	8			. F			57
	·	Substra	te	<u> </u>			
Boulder (%)				<u> </u>			
Cobble (%)							
Gravel (%)							
Sand (%)	100	100	100	100	100	100	100
Mud(%)							
		Eelgras	s/0.25 r	n2	<u> </u>		
2 o'clock						,	
6 o'clock	-		ne	one			
10 o'clock							
*	<u> </u>	Macro A	Algae Pe	ercent C	over/0.2	25 m2 <i>*</i>	
2 o'clock			• •				_
6 o'clock	-					-	
10 o'clock			no	one			
Dominant Algal							·
Species:				,			
		Inverteb	rates	2 ^			
Goeduck		cn	A	tes	7		
			og ex				
Dungeness							
			يد.				
Starfish							
Fish							
Other							

Date: 7/29	1/03		Transect	# 520	2500	eth
7	l	Transe	ct Stops			
	10	20	30	55	80	105
Time:			1			
Depth	no	17	don	e >	20	LA d
Depth @ MLLW					I	
Visibility						
		Substra	ıte			
Boulder (%)						
Cobble (%)						
Gravel (%)						
Sand (%)	100	-	1			
Mud(%)						
		Eelgras	s/0.25 m2			
2 o'clock						
6 o'clock			non	p .		
10 o'clock						
	Macro Al	gae Per	cent Cover	/0.25 m2		
2 o'clock				·		
6 o'clock						
10 o'clock			non	0	_	
Dominant Algal			·			
Species:				·		
		Inverteb	orates			
Goeduck		-				
Dungeness						
					·	
Starfish						6
Fish						
Other						

Date: 7/24/6	7 2		Transc	A 11 A	-11-1	, , , ,	
Date. //29/C	13 -	-Tuono o	Transe		-40 N	orth	
1	155		ct Stops		l	00	T
T:	0.	10	20	30	55	80	105
Time:	1155	1155	1155	1156	1156	1157	1157
Depth:	13	/3	/3	12	12	/2	12
Depth @ MLLW						ļ	
Visibility						<u> </u>	
	Т	Substra	ite			·	
Boulder (%)							
Cobble (%)							
Gravel (%)							
Sand (%)	100	106	100	100	100	100	100.
Mud(%)							
		Eelgras	s/0.25 r	n2 .			
2 o'clock							
6 o'clock			20	ne			
10 o'clock							
		Macro A	Algae P	ercent C	over/0.2	25 m2 [*]	
2 o'clock							
6 o'clock							_
10 o'clock			20	20			
Dominant Algal							
Species:						·	
							·
·		Inverteb	rates				
Goeduck			·				
Dungeness							
Starfish							
Fish							
Other							
		,					
		4.					
				<u> </u>		L	

Date: 7/24	03		Transect	# <u></u> 4	0 500	,+1
Date: // 20//	/ U 	Transec		т 5 /		1/7
	10	20	30	55	80	105
Time:	10	20	- 00	- 00	- 00	100
Depth	no	+ do	40	> 20	10	-1220
Depth @ MLLW	110		10,0	_ ~ ~ ~	97	DOIN .
Visibility						
Violonity		Substrat		<u> </u>		
Boulder (%)		Capatrat				
Cobble (%)						
Gravel (%)						
Sand (%)	100	***************************************				
Mud(%)	1 700		 			
		Falorace	s/0.25 m2			<u> </u>
2 o'clock		Loigiass	0.20 1112			<u> </u>
6 o'clock			non	20		
10 o'clock			71071	<u>C</u>		
10 0 01000	Macro Al	nao Poro	ent Cover	/0.25 m2		,l
2 o'clock	IVIACIO AI	gae i eic	CITE COVE	10.23 1112		T
6 o'clock						
10 o'clock			- 10 00 /			
Dominant Algal			nov	1 2		
Species:						
Species.			-,-			
		Inverteb	rotoo			
Goeduck		Inverteb	ales			
Goedack						
Dunganasa						-
Dungeness						
Ctartiah		· · · · · · · · · · · · · · · · · · ·				
Starfish						÷
Fish						
LISH	· .					-
Othor						
Other		· ————————————————————————————————————				

D . /-	+		· .		1		 _
Date: 7/24	<u> 0}</u>		Transe		5-60	<u>//o</u>	nth
	, 		ct Stops				
	0	10	20	30	55	80	105_
Time:	1/201	1201	1202	1202	1202	1203	1203
Depth:	17	16	15	13	15	16	NT
Depth @ MLLW							
Visibility							
·		Substra	ite				
Boulder (%)							
Cobble (%)							
Gravel (%)							
Sand (%)	100						160
Mud(%)							
	•	Eelgras	s/0.25 r	m2			
2 o'clock	0	<u> </u>					
6 o'clock			ne	ne			
10 o'clock			, , , ,				
		Macro A	Algae Pe	ercent C	over/0.2	5 m2	
2 o'clock			. 9				
6 o'clock			20	00			
10 o'clock			- 7	1			<u> </u>
Dominant Algal							
Species:							
	<u> </u>	Inverteb	rates	L			<u> </u>
Goeduck			14100				
	50	ecklea	15	and	dolo	5	rotter
Dungeness	P	201-1100		7710	0,00	<i>J</i> 3	7// 1
_ <u>go</u>						:	
Starfish							
Fish							
Other							
<u> </u>							
The state of the s							
	L						

Date: 7/24	1/22		Transact	Д 🧨 /		W
Date. //29	103	Transaci	Transect	# 568	0 50	ath
	10	Transect			00 1	405
Time	10	20	30	55	80	105
Time:	no	do	ne -	100	deep	
Depth						
Depth @ MLLW						<u>:</u>
Visibility	<u>L</u>					
D 11 (0/)	Т	Substrat				
Boulder (%)		·	1			·
Cobble (%)						
Gravel (%)						
Sand (%)	100		>			
Mud(%)						
	γ	Eelgrass	/0.25 m2			
2 o'clock						
6 o'clock		N	014	2		
10 o'clock						
	Macro Al	gae Perc	ent Cover	/0.25 m2		
2 o'clock						
6 o'clock						
10 o'clock	-		non	P		
Dominant Algal						
Species:						
						,
		Invertebr	ates			
Goeduck						
	/					
Dungeness						
					·	
Starfish						
Fish						
			-			
Other						
	-					

Appendix C

Point Wells Eelgrass Survey Datasheets

Point Wells - Outfall Zone 7S August 11-12, 2003 Datasheets

Transect Stops — 20-foot intervals along each transect from 0 to 240 feet. Shown as column headings on the datasheets.

Transects — 105 North (N), 55 N, 10 N, 0, 10 South (S), 55 S, 105 S.

Point Wells - Outfall Zone 7S August 18, 2003 Datasheets

Transect Stops — 20-foot intervals along each transect from 0 to 240 feet.

Transects —80 North (N), 30 N, 20 N, 20 South (S), 30 S, 80 S. Shown as column headings on the datasheets.

Zone 7s Chevron Dock Data Forms

Parametrix project number

555.1521.045.02.07

chevron Dock Transect King County Eelgrass Survey Data Form Transect # Baseling Date: Transect Stops 220 -20- 10 55 30 105 Time: Distance Transect 220 240 260 280 300 Stops Depth Depth @ MEEW 202 Visibility -6 Substrate Boulder (%) Substrate Cobble (%) 00/4 Characteristics Gravel (%) 10/1/1 60 Sand (%) 10 Mud(%) Eelgrass/0.25 m2 2 o'clock 455 **Eelgrass** 6 o'clock 6) 0 Counts 20 10 o'clock Macro Algae Percent Cover/0.25 m2 2 o'clock / < 6 o'clock Algal 10 o'clock Counts Dominant Algal 11109-UIVa LIXVar 11/11/9 U/1/29 Species: Sm. +740 Sen th 12-12 Invertebrates Goeduck Dungeness Organisms Observed Starfish & Notes Low Fish 12105 Sand Other Snail

- 1	Kin	chevi g County E	elgrass Su	rvey Data F	orm		1	
8/18/03	3		<u></u>			\leftarrow		Transect
Date:		Vorte	Transe			<u> </u>	76	Stop
	-4-2	1	ct Stops		(30	30	80	
- :	2	3	80	**	- 35			
Time: C	20	30	80					Δ
Depth:								Transect
Depth @ MLLW								
Visibility	<u> </u>	0 1 - 1	- 1 -					
D l - l /0/.)	T	Substra	ale T	T	T		 	¬ .
Boulder (%)								
Cobble (%)								Substrate
Gravel (%)								Characteristic
Sand (%)								
Mud(%)			/0.05 .	0	<u> </u>			_
			ss/0.25 I	m2	- A	0		_
2 o'clock	0	0	0		2	0	0	Eelgrass
6 o'clock	-	0	0		8	0		Counts
10 o'clock	0	Maara		ove and C	20100/00	<u>G</u>		
0 . 1 . 1		Macro	Algae P	ercent C	Cover/0.2	5 1112		\neg
2 o'clock	-							
6 o'clock					· · · · · · · · · · · · · · · · · · ·			Algal Counts
10 o'clock				-				Counts
Dominant Algal			-	-				
Species:								_
<u> </u>		Inverte	brotos	<u> </u>	<u> </u>	<u> </u>		
Goeduck		inverte	Tales	T				\neg
GOEGUCK								
Dunganess		-						
Dungeness								0,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Starfish	7	1 7	3	cobi	1/0	with		Organisms Observed
Giarrisii	95	avel		rev		ninga	1	& Notes
Fish		1110	(0)		COP	7/7/44		
1 1011	 		-		<u> </u>			
Other	<u> </u>	-	 					

Chevron Dock King County Eelgrass Survey Data Form

Date: 8/11/	103		Transect	# ()	Baselo	100
Dato. 9/1//	220	Transect	L	"	, basen	,,
	1 Q	20-	<u>-30</u>	55	-30	105
Time: Distance	220	240	2.60	280	300	
Depth	7	8	9	10	12	·····
Depth & MEEW	246	253	256	302	306	
Visibility	15			702	700	
-		Substrat	e	-6		,
Boulder (%)						
Cobble (%)	90/90	30				
Gravel (%)	10/110	60	10			
Sand (%)		10	90	100	100	
Mud(%)	·	۸.			·	
		Eelgrass	/0.25 m2			
2 o'clock	6	8	45	0	17	
6 o'clock	6	0	5	3	0	
10 o'clock	.0	0	د 💇 ے	16	20	
	Macro Al	gae Perc	ent Cover	/0.25 m2		
2 o'clock	60	75	5	0_	15	
6 o'clock	60	50	40	0	0	1
10 o'clock	70	55	0	20.	15	
Dominant Algal				<u> </u>	alva-	
Species:	U/V9	UIVa		11/1/9	Ulva.	×
			Smitho		Su 1 th	
		Invertebr	ates		1celp	
Goeduck						
Dungeness						
Starfish			.,.,			<u> </u>
		1 /			Len	
Fish	Sand	dalos			Shring)
011					Devo	
Other	Snall				(-
						
						
<u> </u>						

Chevron Dock King County Eelgrass Survey Data Form

	/		·				
Date: \$\langle \langle	03		Transe			<u>Base li</u>	ne
		Transe	ct Stops	1			
	0	10	20	30	55	80	105
Time: Distance	320	340	360		`		
Depth:	9	12	20				
Depth @ MLLW	1209	(127)	1211	7	· .		
Visibility ·	' /	12.1					
		Substra	ite		-		
Boulder (%)	•					·	
Cobble (%)							,
Gravel (%)	_				3		
Sand (%)	100	100	100		′ .		
Mud(%)	C .		· ·				
		Eelgras	s/0.25 r	n2		.L	
2 o'clock		\wedge	D				·
6 o'clock	Ü	A	Ö			,	
10 o'clock	4	10	0				
	1	Macro A	Algae Pe	ercent C	over/0.2	25 m2	***************************************
2 o'clock	1		Ü	·		Ţ.	
6 o'clock	5	ð	Ū.				,
10 o'clock	20	7)	Λ				
	NIVO	- ''	- V				
Species:	<i></i>						, .
	,		·			,	
		Inverteb	orates	<u> </u>			
Goeduck							
Dungeness		**************************************	3H63#			<i>'</i>	
g		DIA	MMR	1/			
Starfish	,	10					
	~						
Fish		· · ·					
	1						
Other	1						
		`	,				
	Fill			· .			
ī	20						
	V '					<u> </u>	

Date: \$/1/	102		Transe	ct #	10	South	
Date: - 0/1/	100	Transec	t Stops		10	JOU !	1
	0	110	20	-30	55	80	105
Time: Distance	220	246	2/0	280	300	- 55	100
Depth:	Q	10	91	12	13	_	
Depth @ MLLW	317	320	324	326	328		-
Visibility		`					
, ,	•	Substra	te				
Boulder (%)	·						
Cobble (%)	30	50	5			-	
Gravel (%)	20	50			·		
Sand (%)			95	100	100		
Mud(%)	X				•	,	
		Eelgras	s/0.25 r	n2			
2 o'clock	0	9	0	0	16		
6 o'clock	0	0	0	1	16		
10 o'clock Ja.	006	2	0	28	27		
- /			Algae Pe	ercent C	over/0.2	25 m2	
2 o'clock	80	40	0	0	10		
6 o'clock	75	40	2	0	30		•
10 o'clock	50	75	2	10	70		;
Dominant Algal	Ulva	Ula		11/10	alva	-	
Species:		giaar					,
	ent	Saved		Smitt			
		Inverteb	orates				
Goeduck							
					. d		
Dungeness					deco		
***************************************					·		
Starfish				,			
			Sans	<u> </u>	Heinh		
Fish	Perch		dab	5	Sole		
					dabe	4	
Other	oren	2 Snovil					
				ı.			
					<u> </u>		

Chevron Dock King County Eelgrass Survey Data Form

Date: 8/12/0	· 2 국 →		Transe	ct #	10		
-1 100		Transec			//// /	outh	
	1-0-	10	20	30	55	80	105
Time: Distance	320	340	360	- 00		00	100
Depth:	a	14	20				
Depth @ MILW	12/14	1213	1212				•
Visibility	17	7	12				
. 4	-L	Substra	te	<u> </u>	·	<u> </u>	
Boulder (%)].			<u> </u>			٦
Cobble (%)				·			
Gravel (%)							
Sand (%)	100	100	100		,		
Mud(%)	t T	()			,		·
	<u></u>	Eelgras	s/0,25 r	n2		L.,	
2 o'clock	4						-
6 o'clock	0	ð	(7)				
10 o'clock	0	a	P)	-	-		,
-		Macro A	Algae Pe	ercent C	over/0.2	25 m2	
2 o'clock	10						
6 o'clock	10			j			
10 o'clock	5						
Dominant Algal	11/10						
Species:				,			
,		Inverteb	rates				-
Goeduck							
Dungeness							
,						_	
Starfish							
		1	À	7 1	<i>l</i>		
Fish	V	OCK	Sole	X d	955		
	*	V		T			
Other							
	/.				***		
V				***			
X NO V	ρV						
M. The Bus	20	<u> </u>					

Cheuvon Dock Ring County Eelgrass Survey Data Form

Date: 3/11/	03.		Transe	ct # 5	55.50	outh	
		Transec	ct Stops		-	· · · · · · · · · · · · · · · · · · ·	
	-	10	E	-30	55-	80	10
Time: Distance	220	240	260	296	300		
Depth:	9	1/ .	11	12	13		
Depth @ MileW	340	343	346	347	348		
Visibility	15						
		Substra	te		•		
Boulder (%)							
Cobble (%)	50		•		_		
Gravel (%)	44	80	40				
Sand (%)	5	20	60	100	100		
Mud(%)			•			,	
		Eelgras	s/0.25 r	n2	`		<u> </u>
2 o'clock	3	. 0	0	0	23		
6 o'clock	14	19	à	0	1.7		
10 o'clock	0'	0	0	0	60		
1		Macro A	Algae Pe	ercent C	cover/0.2	25 m2	1
2 o'clock	50	75	0	0	30		
6 o'clock	75	20	50,	0.	10	,	
10 o'clock	80	75	35	D	0		
Dominant Algal	80	ulva	ulva		ulio		
Species:		Sanco		,			
		ji da	Squeo	`	Swith		
		Inverteb					
Goeduck		***************************************					
-							
Dungeness							
					·		
Starfish					·		
Fish				•		7	
Other							
		lam					1.
						1	

Little laminaria Rode crab

Date: 8 12/6	٦ ٤ .		Transe	ot #		<u> </u>	
Date. Dizie	<i>/</i>	Transo	ct Stops		55	outh	
	#			30	55	80	105
Eme: Distance		340	360	30	. 55	00	105
Depth:	300	7	12				
Double @ MLLW	1220	122V	1272				
Visibility	12X)	1-51	12-2				
		Substra	ite		. ·	<u> </u>	
Boulder (%)							
Cobble (%)							
Gravel (%)					١,		·
Sand (%)	100	100	100	· .			
Mud(%)			C T				
		Eelgras	s/0.25 r	n2		. ·	
2 o'clock	21	18	0	, · · · · ·			
6 o'clock	12	14	1				
10 o'clock	14	13	1/	(
1.	* '	Mácro A	Algae Pe	ercent C	over/0.2	25 m2	
2 o'clock	35	90	0			·	
6 o'clock	40	60					
10 o'clock	50	75	10				
Dominant Algal					,		
Species:	u_{l}	UND	WILL	. ,			
	1000						
51	n 1 7h	Invertet	rates			<u> </u>	
Goeduck	-	·			-		
		-	/ A-				
Dungeness					-	-	
Ctorfiele	`						
Starfish							
Fish			Pag	0		<u></u>	
1 1011			4				
Other						-	
			X 1)	<u> </u>		
			1				-
	1		7 1			<u> </u>	

Chevron Dock King County Eelgrass Survey Data Form

(- 	```	_	· · · · · · · · · · · · · · · · · · ·		10	4	- 1
Date: 8	11/0	3	Transe		10	<i>d</i>	Jouth
		Transec	ct Stops				
	0	10	20	30	55	80	105
Time: Distance	220	240	260	280	300	320	240
Depth:	10	10	12	12	12	1.5	17
Depth @ MLLW	40	3 40)	358	356	354	430	433
Visibility				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			()
		Substra	te				
Boulder (%)					,		
Cobble (%)	50			ŀ	,	. ,	
Gravel (%)	50	50		·	`		60
Sand (%)	,	50	100	100	100	100	50
Mud(%)			(<u> </u>		
		Eelgras	s/0.25 n	n2			***************************************
2 o'clock	Q	26	0	20	(0)	21	17
6 o'clock	0	27	0	.0	0	14	15
10 o'clock	0	19	3	Õ	n	191	17
		Macro A	Algae Pe		over/0.2	5 m2	2 /
2 o'clock	60	20	2	10	71	2	25
6 o'clock	75	25	(i)	n	7)	133	(7)
10 o'clock	50	50	A	ð	la	50	7 5
Dominant Algal		,		<u> </u>	- U -	alu	alva
Species:		Ulva		11/20		17/109	·
				1/11/29	Υ.		
		Inverteb	rates			L	
Goeduck				·		,	
-							
Dungeness							
- gomeo	,						.3
Starfish						Pycho	
0.0.110.1						17070	
Fish							
		,		· · · · · ·		moor	
Other	KAN				Dirch	7-600	
0.1101	1 JOY Y	I		1	TOOK !	Pola	
,				, ,	00/	K () S	
				<i>\\</i> \\		*	
<u> </u>						L	

Chevron Dock King County Eelgrass Survey Data Form

Date: 8/12/	03		Transe	ct#			1
7		Transec	ct Stops		05	Sou	77
	0	10	20	30	55	80	105
Time Distance	320	340	360	3 30	400	420	,
Depth:	3	6	B	()	14	77	
Depth @ WELW	1238	1242	124/	104	103	111	
Visibility				10.1		L! !	
		Substra	ite				
Boulder (%)		-					
Cobble (%)				~			
Gravel (%)		50	50	5	5		
Sand (%)	100	50	50	95	95		
Mud(%)					1 -		
		Eelgras	s/0,25 r	n2 <u> </u>			
2 o'clock	16_	17	(4	13	0	0	
6 o'clock	19	8	12	25	<u> </u>	0	
10 o'clock	0	24	29	12	7	0	
****		Macro A	Algae Pe	ercent C	Cover/0.2	.5 m2	
2 o'clock,	30	60	50	50	0	5	
6 o'clock	40	50			25	5	
10 o'clock	Q	50		1	20	3	
Dominant Algal	Ulia	ulva	UNA	Ulu	Wist	ulu	7
Species:		9	law		1am	106	h
· · ·	Sun 1	/	Savo	tore	V	Sar	CO
		Inverteb	rates		<u> </u>		
Goeduck						1	Å.
							·
Dungeness				•			
0	/1 t)			,	/)		
Starfish	5hh	\mathcal{A}			Pycn	0,	
					101/	da as	·
Fish		Sculp	າ		das		
Othor			,	44	120)	,
Other					Rere	\	
						10:10	/
ű.				<i>></i>		leva	2

Cheuvon Dock King County Eelgrass Survey Data Form

Time

				2		A /	Λ.
Date:	12/0	3	Transe	ct #	10	/ lor	Ph
		Transec	ct Stops		()		
	0	10	20	30	55	80	105
Firm: Distance	220	240	260	280	300	320	340
Depth:	7		9	10	12	19	
Depth @ MLEW	1255		802	807	809	8/2	
Visibility	25		3				
		Substra	te	_			
Boulder (%)		5					
Cobble (%)	10	スロ					
Gravel (%)	85	70	50				•
Sand (%)	5	5	50	100	100	100	100
Mud(%)							4
		Eelgras	s/0.25 n	12			
2 o'clock	3	0	53	0	0	0	0
6 o'clock	0	. 0	32	0	17	0	0
10 o'clock	0	0	0	0	13	0	0
	•	Macro A	Algae Pe	ercent C	over/0.2	25 m2	
2 o'clock	85	60	10	0	(1)	<i>O</i>	0
6 o'clock	90	30	10	0	5	6	0
10 o'clock	75	7.5	35	0	10	0	\sim
Dominant Algal	uka	Ulva	Ulu		Ulva	7.0	
Species:		Sarco		,		,-	
·	digar		Su, 7		6		
		Inverteb		1			
Goeduck	,			0	.d		
horse		horse		Chi	A	۲	/
Dungeness		Shriux	deco	X	60		
				ć	d		
Starfish		,		A			
,					.9		·
Fish				2	Rock	Sant	
				\$	5d0	dalo5	
Other	Shail			3	i		
	Kam	·		d		·	
·				2			
	<u> </u>				L		

360

Cations account

Date: 2/12	103		Transe	ct #	4	- \lambda / .	1	
0/10/		Transec	t Stops			Nov	11	
	0	10	20	30	.55	80	105	<u> </u>
Time: Distance	120	340	260	200	3/50	320	340	360
Depth:	6	7	(X)	19	10	14	27	28
Depth @ WILLW	819	821	824	826	829	833	<i>५</i> ८ २ ४	836
Visibility								
		Substra	te		· · · · · · · · · · · · · · · · · · ·			
Boulder (%)								
Cobble (%)	90	90						
Gravel (%)	5	5	0150					
Sand (%)	5	5	100/50	100	100	100	100	100
Mud(%)								
		Eelgras	s/0.25 r	n2				59
2 o'clock	C	0	0	28	18		2	
6 o'clock	4	0		17	23	17	()	3-3.
10 o'clock	'0	0	0	0	20	1.6	<u>()</u>	· ·
		Macro A	Algae Pe	ercent C	over/0.2	25 m2		, k
2 o'clock	75	75	0	30	()	10	0	1 3
6 o'clock	70	80	80	10	30	10	0	2
10 o'clock	430	75	80	<i>'0</i>	30	10	A	1 3
Dominant Algal	28.		Ula	11/19	úlva	ulu		
Species:	Ulva	Ulvo	lam	· · · · · · · · · · · · · · · · · · ·		١	i d	
	Poly	Sarco	RON	SWITH	Smith	54 /T	P	
	/	Inverteb	rates					
Goeduck		Porth						,
hounit	***************************************							
Dungeness ,				Seem				
ROCK Crap	1							
Starfish								
	,					0		
Fish					·	0		
						2		ı
Other								'
						8		,
						'		

· /	ſ			. 4				,
Date: $8//2/$	ロマ		Transe	ct#	116	6	N/	
/	<i>)</i> .	Transec	ct Stops	1		2 1	Porth	
	0	10	20	30	55	80	105	
Time: Distance	220	200	260	230	300	320	340	360
Depth:	5	6	7	9	9	12	16	360
Depth @ MLLW	940	843	845	946	847	952	255	850
Visibility				0 10			- 7-	000
		Substra	te					
Boulder (%)	·			, -				
Cobble (%)								
Gravel (%)	50	50	20			50		
Sand (%)	50	50	80	100	100	50	100	100
Mud(%)				(€
		Eelgras	s/0.25 r	n2				
2 o'clock	Q	7	0	0	27	2	0	0
6 o'clock	0	8	0	Ö	29	17	0	000
10 o'clock	0	0	17	()	16	10	0	0
		Macro A	Algae Pe	ercent C	over/0.2	5 m2		
2 o'clock	28	50	0	0	30	5	0	0
6 o'clock	20	10		0	25	15	0	0
10 o'clock	95	75	30	0	10	5	0	Ó
Dominant Algal		PA (VG	ulva		ulva	4/19	•	
Species:		Priom	Ceva	. , .		,	SAVE	
			Sarce	J	Sm. K	SMITH	*	
	\	Inverteb	rates					
Goeduck				6				,
				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		Slump		evas
Dungeness					SLVIV.	by.	·	evas
					Lerm1	7		Pych
Starfish						DV50		•
				~		p t		
Fish				4	dabs	•	daps	ens 1.
					Porch		rock	76
Other				~			:	Flatte alva accum
				73		<u></u>		J 3
		· ·		20		2	e e	2 2
				W		101		£ 1
		•	,			U	·	七十
			•				•	200

King County Eelgrass Survey Data Form
Cherron Dock

Date: 8/11/63	· /	7(8)	Transe		20	50	+2
-4.6. (1/1///52		Transec	ct Stops		<u> </u>		
	0	10	20	30	55	80	105
Time:	13805				102		103
Depth:							1/3/
Depth @ MLLW	111	per	int	PVT	· da/		
Visibility							
	<u> </u>	Substra	ite				
Boulder (%)	Q	25		b	100/100		e .
Cobble (%)	20	75			1 /		75/75
Gravel (%)	£ .						25/25
Sand (%)	5						
Mud(%)	Œ						
		Eelgras	s/0.25 r	m2			
2 o'clock	0	0			0		
6 o'clock	0	0			Q		0
10 o'clock	Ô	0			0		0
		Macro A	Algae Po	ercent (Cover/0.2	5 m2	
2 o'clock	0	0	į		0		0
6 o'clock	0	\bigcirc	·		0		0
10 o'clock	8	0			0		0
Dominant Algal							
Species:			·				
		Inverteb	orates				
Goeduck							
Dungeness	<u>.</u>						
Starfish							
Fish							
					 		
Other							-
·							
·				1 + 0 1			

upper graved intertidal mo olgan or Barnacles King County Eelgrass Survey Data Form
Chewon Dock

	1 2 2 2		EUVUN	er (Sant)		
Date: \$/11	03		Transect	# 🗭	<u> 50u</u>	73
Otranse + 751 Am		Transec		· ·	/	
	10	20	<u>30</u>	55	80	105
Time: 1350	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\					
Depth High water	0/10/35/0					
Depth @ MLLW	+15%					
Visibility		UPP	er in	ter tie	la l	
	Brown	Substrat	е			·
Boulder (%)	College					
Cobble (%)	1009					
Gravel (%)	/10					
Sand (%)	190					
Mud(%)						
		Eelgrass	s/0.25 m2			
2 o'clock	0/0/0	<u> </u>				
6 o'clock	000					
10 o'clock	01010					
		gae Perc	ent Cover	/0.25 m2		
2 o'clock	0/0/0					
6 o'clock	01010					
10 o'clock	0/010					
Dominant Algal	none					
Species:	1.000					
		Inverteb	rates	•		
Goeduck						
Dungeness					,	
9						
Starfish				*****		#
					, '	#
Fish	`		I ·			
				·		
Other						
					<u> </u>	
· · · · · · · · · · · · · · · · · · ·						
	<u> </u>		L			L

upper sandy

Sandy intertidal

	1	<u> </u>		000			# 1
Date: 8/11	105	T	Transe			OA	jorth
, ,	T ₁ 1 -		ct Stops		/1 1 s / . 	r	<u> </u>
4 1 3 J	10	#0	25	335	55.	80	105
Time:				ļ			
Depth:							
Depth @ MLLW			46-	4 . 8			
Visibility							
		Substra	ate				
Boulder (%)	10						
Cobble (%)	40						~
Gravel (%)				V	11,0111 >-		9
Sand (%)	50				-		
Mud(%)							
	_	Eelgras	ss/0.25 i	m2	70		2
2 o'clock	0	——————————————————————————————————————					7
6 o'clock	0						
10 o'clock	0				, , , , , , , , , , , , , , , , , , ,		
	U	Macro	Algae P	ercent C	over/0.2	5 m2	
2 o'clock			T		, ·		
6 o'clock	0	-			•		
10 o'clock	0						
Dominant Algal							
Species:	-					· · · · · · · · · · · · · · · · · · ·	·
<u> </u>			1				
	<u> </u>	Inverte	brates	<u>.</u>	<u> </u>		<u> </u>
Goeduck	T	11110110	1	T			
GGGGGG				<u> </u>			
Dungeness							
Dangeness							
Starfish							
Otariisii		, .					
Fish	100						
1 1311	1707			 			
Other	'M						
Olliel			+	 			
	0100		-	-			
	K,b		 				
		-		<u></u>			

King County Felgrass Survey Data Form

A EVVON DOCK

Date: <a>\(\) 	102		Transect	# //	1	
Date. 6/11	עטי <u>ן</u>	Transect		π \mathcal{U}		Doul
	00	Transect		55	80	105
Time:	9, 1) ا حدی	2 39 '	1259	00	105
Depth				1231		
Depth @ MLLW						
Visibility						+
Visibility	L	Substrat	Δ			
Boulder (%)	l'o	Oubstrat		1.3.	Page 1	
Cobble (%)	501	an I	cen ton	90/90/90	<u> </u>	90/90/90
Gravel (%)	100	. //	90 90	10/10/10	<u> </u>	10/10/10
Sand (%)		0 10/	10 10	10/10/10		10/10/19
Mud(%)	10/0	<u> </u>				
707	<u> </u>	Eelorass	/0.25 m2	L-,		
2 o'clock	0	<u></u>	, 51 1116	0		
6 o'clock	0	8		$\widetilde{\mathcal{O}}$		10
10 o'clock	0	Ŏ				10
	Macro Ald	gae Perc	ent Cover	/0.25 m2	<u> </u>	
2 o'clock	0	10		0	,	0
6 o'clock	0			0	1	0
10 o'clock	0	0		0		0
Dominant Algal						
Species:				drift		dr/+4
	Ulva			ulva		4/4
		Invertebr	ates	**************************************		
Goeduck						
Dungeness						
Starfish						· Æ
Fish /	106			mid		
. •	\mathcal{M}			inter		
Other	<u>ó / </u>					
	Kip			Barn		Ban
	Run					
	Kap					,

King County Eelgrass Survey Data Form Che Vron Dock

Date: 8/11/2	ク マッ	-	Transe	ct #	-	011	math
Date: 10/11/18	(Transe	ct Stops			<u>O IV</u>	OVIN
	10	10	20	30	55	80	105
Time:	1/124		ν.	7	1226		122-
Depth:	1				12.00		1000
Depth @ MLLW	in	tert,	del				
Visibility	* PE	/	1 34				
		Substra	ate	 	.1		· · · · · · · · · · · · · · · · · · ·
Boulder (%)					25		100
Cobble (%)	60/60/	6			75.00	-	
Gravel (%)	40/40/	ř					·
Sand (%)	,						
Mud(%)	·	·					
		Eelgras	s/0.25 r	n2			
2 o'clock	0				0	. •	0
6 o'clock	0				0	-	
10 o'clock	0		·		0	_	0
		Macro /	Algae Pe	ercent C	Cover/0.2	5 m2	
2 o'clock	75				0		
6 o'clock	75				Ω		0
10 o'clock	75				0		0
Dominant Algal	ulva						
Species:				r			
	·						
		Invertel	orates				
Goeduck							
	·						
Dungeness							
Starfish							
Fish					,,		
	15				100		MIL
Other	Bam				of		,
					RSp	Lag)	
					,	V	
						,	

Rap

King County Eelgrass Survey Data Form,

Chewon Dock

03	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		# 6	0	South
	Transec		-		
○夢	20		55	80	105
1243		1246	100		1249
	Substra	te			·
Section .					
50/75	0	80/40/7	5 50/90	2/50	90/90/
50/25/	0	20/20/	1 3. 14 / 1	,	10/10/12
	,	/20	. 1	7	
		1			·
	Eelgras	s/0.25 m2			
0		0	0		
0		0	0		0
(-)		0	-0		0
Macro Al	gae Pero	cent Cove	r/0.25 ₋ m2		
75		165	1		30
25		65	5		10
90		60	50		1 2
11100		11/4		-	
		1.			
·	Inverteb	rates	·		
1					
			Barn		
		 	10000		
	03 03 243 50/25/ 50/25	Transection 20 20 29 Substrate Substrate Solver / 50 Solver / 50 Macro Algae Pero 75 85 80 Ulvy Inverteb	Transect Stops 20 10 26 12.46 Substrate Substrate Eelgrass/0.25 m2 O Macro Algae Percent Cover 75 65 80 50 Ulvy ulv9 Invertebrates	Substrate Soly So	Transect Stops Transect Stops

less ulva - Same

cobble/ shares

Date: 8/11/	03		Transect	# 0		Vorth	1
0 ///	<u></u>	Transec				VONIA	
794may/80°	10	20	30	55	80	105	
Time:	1219		<u> </u>	1220			
Depth							
Depth @ MLLW						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Visibility		·					
		Substrat	:e				
Boulder (%)					Č	20	
Cobble (%)	50/50/7	5		50/50/50	2		
Gravel (%)	50/50/2	5		50/50/5	_O	40/25	10
Sand (%)	, ,	· ·				20/75/	50
Mud(%)						/ /	
		Eelgrass	s/0.25 m2				
2 o'clock	0			0		0	
6 o'clock	0			0		0	*
10 o'clock	0			0		0	
	Macro Al	gae Perc	ent Cove	r/0.25 m2			
2 o'clock	15			25		10	
6 o'clock	15			15		02	drift ulva
10 o'clock	75			10		0	ulia
Dominant Algal	MVG			ent		Ulva	
Species:				ulva		ent	
			·				
	· · · · · · · · · · · · · · · · · · ·	Inverteb	rates				
Goeduck							
					· · · · · · · · · · · · · · · · · · ·	ļ	
Dungeness							
<u> </u>					•		
Starfish							
						-	•
Fish							·
				fen			·
Other	Son B	arn		13am			
·	Snail,						
	Shore	wabs					

toe of Rap

Date: \$/11	102		Transe	ct #	20	Sout	7
	1	Transe	ct Stops				
	0	再	1020	30	55	80	105
Time:	1236				2 1 2		1240
Depth:	1 2 3						
Depth @ MLLW						\$	
Visibility							
		Substra	ate		**************************************		
Boulder (%)	2) *					
Cobble (%)	50/25	/50	75/50	40	80/80		85/80/20
Gravel (%)	50/25		25/50	1 .	20/20		15/20/8
Sand\(%)	1 / ,		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		1		
Mud(%)							
		Eelgras	ss/0.25 r	n2			
2 o'clock	0		0		0		0
6 o'clock	0	•	0	,			0
10 o'clock	0		0		(7		6
		Macro_	Algae Po	ercent (Cover/0.2	5 m2	
2 o'clock	7.5	s.	85		80		90
6 o'clock	75		75		75		フケ
10 o'clock	75		50		75		10
Dominant Algal	ulu	* 1 *	why		Ma		ulva
Species:					, i		
		Invertel	orates				
Goeduck							
Dungeness							
Starfish							-
					ļ ·		
Fish							
0:1							
Other	13553	* **			3.3.4.2		
			ļ		100		
							1 (1)

generally colde gravel shore with ulva & barnacless

D-1 2111		CE OF	· · · · · ·	OCK	· <u> </u>	X /
Date: 2/11/	03		Transec	t# / <u>(</u>)0	Worth
X		Transec				
	10	20	30	55	80	105
Time:	1212			12/5		1217
Depth	1 1	erti da	/			
Depth @ MLLW	141	erti da				
Visibility	<u> </u>					
		Substrat	te 🔪			
Boulder (%)	Tim!			* .		
Cobble (%)	50/50/5	0		50/75/	10	25/75/10/18
Gravel (%)	50/00/5	U	67	50/25/3	0	25/10/18
Sand (%)	10/1	,				15/
Mud(%)						
		Eelgrass	s/0.25 m2		l	
2 o'clock	0			()		0
6 o'clock	0			0		0
10 o'clock	0			19		B
		gae Perc	ent Cove	r/0.25 m2		
2 o'clock	65	94.0 . 0.0		701201112		90
6 o'clock	15		<u> </u>	172		
10 o'clock	50			80		85
Dominant Algal	Ulva			4/1/4		Ulry
Species:	4704			11109		9714
Орсоюз.						
		Inverteb	ratos	1	<u> </u>	
Goeduck	Γ	IIIVEILED	lates			T
GOEGUCK		·		<u> </u>		
Dungeness						
Dungeness						
Starfish						
Starrish						
Eigh						
Fish				<u> </u>		
Other				 		2 311 2 3
Other	Shove			Barn		Barn
	Barn					
				ļ	·	

Date: 8/11/0) } ,		Transe	ct #	100	7 5	outh
,		Transe	ct Stops		<i>y</i>		y :
	0	***	3 b	35	55	80	105
Time:	1231			7			1/135
Depth:							
Depth @ MLLW							
Visibility						***************************************	·
		Substra	ate		-1		
Boulder (%)		4					
Cobble (%)	75/00	150	30/50/	75	75 ao A	'n	40/50/
Gravel (%)	24/50	150	50/50/	75	25/10/10		60/50/
Sand (%)	3/*		1 /3 /	~~	7/0 //		7 7
Mud(%)							
	_	Eelgras	ss/0.25 n	12	<u></u>		
2 o'clock	0		0		0		0
6 o'clock	0		0		0		0
10 o'clock	0		0		0	\$	0
		Macro	Algae Pe	ercent (Cover/0.2	5 m2	
2 o'clock	80		40		80		90
6 o'clock	30	•	40				90
10 o'clock	20		80		80		95
Dominant Algal	Ulvy		4/1/4		uluq		uly
Species:			Porply				Porphy
		Invertel	orates	-			
Goeduck							
	-						
Dungeness							
Starfish							
Fish							
Other	Bam						
				,			

King County Eelgrass Survey Data Form
Chewon Dock

Dato: 8 11	10.2	-hev		100C		
Date. 8///	Transect # Dord					
	10		Siops	l ee	00	105
Time:	 	39			00	
	1203			1208		1211

VISIDIIILY	<u> </u>	Cubatrat	<u> </u>		<u> </u>	
Poulder (9/)	T 1:27	Substrat	e I	T-AT	T	
	£3 1 4			3 / /	1.2	
	1/ 1/			1 1 1/1		595050
	60/60/2	0	>	10/50/	50	50/50/50
				<u> </u>		
Mud(%)	<u> </u>					
		Eelgrass	/0.25 m2			
			, `	0		0
			,)	0		0
10 o'clock			Sign	0		0
	Macro Al	gae Perc	ent Cove	r/0.25 m2		
2 o'clock	25			65		30
6 o'clock	35			65		20
	90		į.	8.5		75
Dominant Algal	ulva.			Ulva.		(1/4
		Inverteb	ates	****	<u> </u>	
Goeduck				·		
Dungeness						
Starfish						
				ı		
Fish						
			-			
Other	Rown		F.,	5		Sparit
	1	··		1		
		***************************************		10914		1:4/2
						12/://2
	<u> </u>			L	l	1

Date: 8////c	2.3		Transe	ct #	120	500	ith
/ / / /		Transec	ct Stops	in N		1,71	```
, fa	0	#	3 C	30	55	80	105
Time:	1122	,	1/24		1126	:	1128
Depth:							
Depth @ MLLW	Th	ertid	al				
Visibility							
	<u> </u>	Substra	ite			-	-
Boulder (%)	6/						
Cobble (%)	180/	- سے د	25/25/1	10	50/40/15		60/40 F
Gravel (%) /	5/20/5		/ /	0	50/60/2		4060/
Sand (%)	10010	3	5/ 3//				17/2
Mud(%)		·					
	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	Eelgras	s/0.25 r	n2			
2 o'clock	0		0		0		0
6 o'clock	0		0		0		0
10 o'clock	0		0		0		0
		Macro A	Algae Po	ercent (Cover/0.2	5 m2	
2∘o'clock	75		75		80		85
6 o'clock	55	- · ·	75		3		75
10 o'clock	20		35		95		85
Dominant Algal	Ulva		ulvy	1.3	4/1/9		ulva
Species:				,			,
	Poly		919 ar		Porphy		
	./	Inverteb	orates		7		·
Goeduck							
Dungeness							
Starfish							
Fish							
					·		
Other	Barn		Sneil		moonc	9 <i>9</i> 5	·
			Barn		Snai	7	
			Show	crah	Barr		
				, , , , , , , , , , , , , , , , , , ,			·

L 5% other cobble gravel beach

Date: 8/11/6	72		Transect		19 1A	
Date. S///C	<u> </u>	Transec		# / //	ON W	Worth
	10	20	30 S	55	80	105
Time:	1158	20	30		. 00	105
Depth	1/100			1201		
Depth @ MLLW	int	er tie	lal	√ f*		
Visibility	1 1 1	en 170	X (0)		t de la companya de	
Violomity	<u> </u>	Substrat	Б	I		
Boulder (%)		- Casona.			1	
Cobble (%)	25/10/	75	2	50/75-18	80	20/20/20
Gravel (%)	1/1 /	25			20	80/80/75
Sand (%)	180)			50) , , e		00/00/10
Mud(%)	10-1			·		
<u> </u>	·	Eelgrass	s/0.25 m2	L.	 	
2 o'clock	0			0		0
6 o'clock	0			0		
10 o'clock	0		\$ ·	0		Ω
	Macro Al	gae Perc	ent Cover	/0.25 m2		
2 o'clock	80			90		65
6 o'clock	50	jl .	. 5	90		65
10 o'clock	85		+ 18	90		70
Dominant Algal	Muy	3	7.3	11/14.)	4/14
Species:	الودر ا		1.00	poly		
				/		
		Inverteb	rates			
Goeduck	27					
Dungeness						
Starfish						<u>.</u>
Fish						
Other		·				
Other	Som			Ţ		Barn
			,			Snai)
L					<u> </u>	<u>.</u>

Occasional spit observed (Butter clam) Same as other side

King County Eelgrass Survey Data Form Chevron Dock

Date: 8/11/0	23		Transe	ct #	1110	Sout	1
		Transe	ct Stops		190	<u> </u>	
	0	重	20 to		55	80	105
Time:	1113		1116		1117		1120
Depth:	lint	ertio					17750
Depth @ MLLW							
Visibility							
		Substra	ate				
Boulder (%)							
Cobble (%)	90/50	150	50/65/6	5	65 75/8	25	10/10/10
Gravel (%)	110/-0	1	10/10/	/	120/201		2/0-19
Sand (%)	10100	50	120/2	<i>y</i>	37/25/1	P	10/701
Mud(%)						Barn	Shell ha
		Eelgras	s/0.25 n	n2			
2 o'clock	0		0		0		0
6 o'clock	0		0		0		0
10 o'clock	0		0		0		0
•		Macro /	Algae Pe	ercent	Cover/0.2	25 m2	
2 o'clock	80		75		85		35
6 o'clock	25		80		85		75
10 o'clock	65		80		25		85
Dominant Algal	ulvy		4149		4/14		ulva
Species:	1 1	ž,	aigar		endo		
			, ,				
	·	Inverteb	orates				
Goeduck							
Dungeness					,		
<u> </u>							1
Starfish						-	
- - - - - - - - - -							
Fish							
Other	2				1		
Other	Barn		Snai'		Snall	ļ	Snail
	Snall	·	Barn	· · · · · · · · · · · · · · · · · · ·	Barr	-	less Bar
						1 5	
1 ~2		1/	<u> </u>			•	

< 5% other algae
75% cobble 25% gravel (smoller material)

King County Eelgrass Survey Data Form,
Chevron Dock

Data:	(nev	Turner				ı
Date: 8//1/6	<u> </u>	T	Transect	# 160	D No	orth	
	1 40	Transec	t Stops	T			
T:	10	3		55	80	105	
Time:	1150			1154		1156	
Depth	-	1 1	, , , , , , , , , , , , , , , , , , , ,				
Depth @ MLLW	117	ertid	a/ .	<u> </u>	<u> </u>		
Visibility	<u> </u>						
	T	Substrat	te		,		
Boulder (%)				, , , , , , , , , , , , , , , , , , , ,			
Cobble (%) 25	85 175			50/25/	10	35/75/	75
Gravel (%)	15 /25			56/25/	5	65/15	120
Sand (%)	/		In	150/	0		
Mud(%)	*						
		Eelgrass	s/0.25 m2				
2 o'clock	0			0		0	
6 o'clock	0	aP-∞		0		0	
10 o'clock	0	, and a		0		0	
		gae Perc	ent Cover	/0.25 m2			
2 o'clock	80		×.	75		75	
6 o'clock	80			85		80	
10°o'clock	80		Ç,	85		95	
Dominant Algal	Ulva			Mlva		4/4	
Species:	Poly	,		Pupi			
	Papil			0 302			
		Inverteb	rates		<u></u>		
Goeduck							
Dungeness							
Starfish		, .				 	
						<u> </u>	
Fish							
						 	
Other							
0 0 101		:	,				
			· · · · · · · · · · · · · · · · · · ·			 	
						 	
·			<u> </u>				2

Same as other side

Date	: 8/11/0	73		Transe		60	Sou	Yh_
	· /			ct Stops	;			
		0	類	030	30	55	80	10
Time		1058		2102		1106		110
Dept		linto	er tio	ha/				
	h @ MLLW							
Visib	ility							
			Substra	ate				
	der (%)	15				:		,
Cobb	le (%)	30/	5 78	15t 85	-	65/75/	75 1	0/75
Grav	el (%)	50%	_	1 1	-	25/25/	1	155
Sano	(%)	5	70	125/15		10		125
Mud(%)							1
			Eelgras	ss/0.25 r	n2		. 	
- 2	2 o'clock	0		0		0		0
(o'clock.	0		0		0		0
1	0 o'clock	0		()		0		0
			Macro	Algae Po	ercent (Cover/0.2	25 m2	
ove 2	2 o'clock	75	33	85		75	T .	80
6	o'clock	80		85		80		35
1	0 o'clock	85		60		. 75		25
Dom	ninant Algal	ulva		4/14		Wiva		ulv
	Species:	gigart		ent		gigar		
	minor					7,90		
			Inverte	brates	h			<u> </u>
Goed	uck		:					T
Dung	eness							
Starfi	sh							
-								<u> </u>
Fish		·						1
Other	•	Sna1)		Cocke	0			Sno,
				1; Hte	ļ(Born
				Snail				150VV

< 5% other algae >80% cosbe/grave/ Brack move sand King County Eelgrass Survey Data Form
Chewon Dock

Date: 8/11	03		Transec		0: V	Jon-H
		Transec	et Stops		——————————————————————————————————————	
	10	-	- 38	55	-	105
Time:	1145		(*)	1147		1149
Depth					***************************************	
Depth @ MLLW						
Visibility						
		Substra	te			·
Boulder (%)		T T				
Cobble (%)	80/90/	50	. *	95/90/7		70/201
Gravel (%)	1 6	5	· 2	23	<u>.</u> .	20/20/
Sand (%)	 			5/10/	τ	10/10/
Mud(%)		-		7/0/		10110
		Eelaras	s/0.25 m2)		1
2 o'clock	0			0		0
6 o'clock	0			0		0
10 o'clock	0			0		10
		gae Per	cent Cove	er/0.25 m2		
2 o'clock	80		\(\cdot \)	80		165
6 o'clock	35		1. 1. The second	2		75
10 o'clock	80			75		75
Dominant Algal						
Species:	ulvy			My		ulvy
1	Giegar P.					10,12
	Polu.	Inverteb	rates	Papi Poly		
Goeduck	1 /		1	10/9		
Dungeness						
Starfish						
Fish						
Other	Snail					
) (4 '		>	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		
						
			 			
	1	l	ı			1

Same as other side

King County Eelgrass Survey Data Form Chevron Dock

Date: 8/11/03	•		Transec	et #	80	Sou	72
Of the state of	 	Transe	ct Stops			S DV	12
	0	#	1020	36	55	80	105
Time:	1047		1050		1052		1050
Depth:	1017		1,000		1/45		1030
Depth @ MLLW							
Visibility							
		Substra	ate		<u> </u>	<u> </u>	
Boulder (%)							
Cobble (%)	80	890	80		75		60/50
Gravel (%)	15		10		15		10/10
Sand (%)	5	10	10		10		30 Kg
Mud(%)							1 7.0
		Eelgras	ss/0.25 m	12	<u> </u>	L	1
2 o'clock	0		0	····	0		0
6 o'clock	0		0		0		0
10 o'clock	0		0		0		0.
		Macro	Algae Pe	rcent (Cover/0.2	5 m2	
2 o'clock	ઉઈ		80		75		50
6 o'clock	90		80		80	,	3
10 o'clock	75		85		85		25
Dominant Algal	Ulva		ulu		4/14		1
Species:	101		ent	• . •	gigar		ulva gigar
	919ar		·		ividea		7-7
		Inverte	brates				
Goeduck			·				
Dungeness							
Starfish							
7 - 7					,		
Fish							
	, ,				-		ļ, l
Other	Snails		Little		Snail		Snai!
	Barr	-	Snails		Barn		Boun
			Born		li'ttle		
	- 01	- U	<u> </u>				

generally < 5% other algae > 75% cobble - Sandier at 105 ft end.

King County Eelgrass Survey Data Form Chevron Dock

Date: 8/11	102		Transec		\bigcirc \wedge	Jar Ka
Buto. 8/11	103	Transec			0/1	1311
	10	200	35	55	#	105
Time:	1131			1134		1136
Depth	1 1 3/					
Depth @ MLLW						
Visibility						
		Substrat	е			
Boulder (%)	Mary San					
Cobble (%)	80/90			80		75-90/7
Gravel (%)	20/ 10			20	-	1
Sand (%)	/					25/10/2
Mud(%)						
		Eelgrass	/0.25 m ²) -		
2 o'clock		,		0		0
6 o'clock	0			0		0
10 o'clock	0			6		0
	Macro Al	gae Perc	ent Cove	r/0.25 m2		
2 o'clock	90			80		50
6 o'clock				75		60
10 o'clock	30			85		65
Dominant Algal	Wy			ulia		Mlvy
Species:	·					
				Poly		
		Inverteb	ates	/		
Goeduck						
Dungeness						
Starfish					•	-
Fish			* ***********************************			
Other				Ban		
				snails		

Same as other side

4

King County Eelgrass Survey Data Form Chevron Dock

-) /	•	Cheo.		, , , , , , , , , , , , , , , , , , , ,	***		
Date: 8 / 1/1	23.		Transe		200	<u> </u>	outh
/ /	T		ct Stops	·			· · · · · · · · · · · · · · · · · · ·
	0	3	10	30	55	3	105
Time:			10				
Depth:	int	er to	dc1				
Depth @ MLLW			,	-			
Visibility					Ì	4	
		Substra	ite				
Boulder (%)							
Cobble (%)	75.78		75		60.		80%
Gravel (%)					110		0/1/
Sand (%)	2525		25		140		10 4
Mud(%)							
	^	Eelgras	s/0.25 r	n2			
2 o'clock			0		0		0
6 o'clock	0		0		0		0
10 o'clock	0		0		8		0
		Macro A	Algae P	ercent (Cover/0.2	5 m2	
2 o'clock	90		90		95		85-
6 o'clock	80		80		95		85
10 o'clock	75		95		90		75
Dominant Algal	- · · · ·		, ,				
Species: D	Ulva		alva		ulva		U/va
mihov-	gigar		Poly/gie	/u.c	10,700		gigar
. , , , , , ,	91901	Inverteb	orates				17/94
Goeduck							
Dungeness							
		. معتبر					
Starfish					1		
					1		
Fish					Snails		
					JYIGII)	·	
Other	8.1 0	limpe	to -	nails	Barn		
	Burn		,	179115	Jarr		
	moon	snai?	<i>eggs</i>				
					+		
	Lİ		<u>. </u>		11		1,4

Saccodio Porphyra generally ulva, ent dominated

2 8% gigar or other

-5%

Chevron dock King County Eelgrass Survey Data Form

T 200

8/18/03	3		1	1			
Date:	7	Vorte	Transe	ct#		Dou	12
		Transe	ct Stops		20	30	80
		3	34	*	-	*	-
Time:	20	30	80			•	
Depth:							
Depth @ MLLW							
Visibility							
		Substra	ate		-		
Boulder (%)							
Cobble (%)	,						
Gravel (%)					,		
Sand (%)							
Mud(%)							
		Eelgras	ss/0 <u>,</u> 25 r	m2	^		
2 o'clock	0	0	0		0	(6)	30
6 o'clock	0	Ŏ	0		0	0	ð
10 o'clock	0	0	6		0	6	0
,		Macro	Algae P	ercent C	Cover/0.2	25 m2	
2 o'clock						,	
6 o'clock						.,	
10 o'clock							
Dominant Algal							
Species:							
							,
		Inverte	brates				
Goeduck							
Dungeness							
Starfish	ar	avel	3	cobi	ste.	with	
	1	1110	101	cobi	dor	7/464	+,
Fish							
Other			-				

Chevron dock
King County Eelgrass Survey Data Form

1 30°

330°

.1		neur		1		· / _	- 2	20
8/18/03		g County E	elgrass Sur	vey Data F		v		20
	1 .	⇒ ⊘*			3	300		
Date:	-AL	3/1/	Transe		nut	<u>/</u>]
	100	Transe	ct Stops		20	30	80	
	20	30	3 0	3 0	55	-80	195	
Time:	08万	0905	0910		0825	0835	0845	,
Depth:	9.	9	9		8	8	33	
Depth @ MLLW								
Visibility	20	20	20		201	201	26	
		Substra	ıte		,		<u> </u>	
Boulder (%)	200							
Cobble (%)	90	90	90		10096	90	90	
Gravel (%)]
Sand (%)	10	10	10		10	10	13	
Mud(%)								
		Eelgras	s/0.25 r	m2				
2 o'clock	20	0	0			3	25	
6 o'clock	9	0	0		12	0	0	
10 o'clock	0	0	0		· V	0	.4	1
·		Macro A	Algae Po	ercent C	Cover/0.2	5 m2	•	1
2 o'clock	50	90	75		50	Go	80	1
6 o'clock	50	100	75		180	60	75	
10 o'clock	90	90	20	,	75	60	90	
Dominant Algal	Ulm	Ny	UVA		lilver	UlVa	Ulva	
Species:	Ulva	(/	U	,	UNK	111	11	
		Inverteb	rates					
Goeduck							Bed Ru	ch Cuch
Dungeness								
Starfish								
Fish								
			·					
Other								
				· · · · · · · · · · · · · · · · · · ·				

Chevron Dock King County Eelgrass Survey Data Form

T-240

Date: 8/18/03	2 .	\ / 	Transe	# <) 4		r
Date. Offor		Transe			outh		
	20		1		20	120	80
Time:	 ~	30	2 0	-3F	**	-	74.00
Depth:	N = 1		107	<u> </u>	111	3 31	. /
Depth @ MLLW	101	1101	10'		111	11	11
Visibility	00				26		<u> </u>
Visibility	1	Substra	20	<u> </u>	Jan U	120	20
Boulder (%)	T	Jubstia		T	T	T	<u> </u>
Cobble (%)	-	F 2	7,		110	10	
Gravel (%)	()	20	13		40	15	20
Sand (%)	10	30	-5	567	30		5
Mud(%)	13	50	20	19	30	20	15
Mud(70)	<u> </u>	L Eelgras	0/0 25 x	m2	<u> </u>	<u> </u>	<u> </u>
2 o'clock	11		5/0.25 [<u> </u>			
6 o'clock	6	2			8	30	
10 o'clock	2	0	17	4	6	21	0
10 0 Clock	3	1/8 Nacro /	Vigo D	oroomt C	1 0	18	6
2 o'clock			Algae Po	ercent C	Cover/0.2	T	r <
	65	50	20		15	20%	,50
6 o'clock	900	20	NO.		1,5		90
10 o'clock	30	20	20		10	LAOULA	75
Dominant Algal		UlVA	NUN		. 1	Celqi	10)UL
Species:	10/UM	WUM	Ulua	,	UTUM		U/UC
Cooduek		Inverteb	rates			1	
Goeduck							
Dunganas		·					
Dungeness							
Ctarfiele							
Starfish							
Eigh				#*			
Fish							
Othor							
Other							
					14		

1 1	·	<u>//</u>	· ·	<u> </u>			
Date: 8/18/03	ÿ	VovH	Transe	ct#		Dou!	12
		Transe	ct Stops		20	30	80
	20	3 0	3 0_	33	*	-933	#95
Time:	1000				1010	1013	1015
Depth:	12	12)2'		11	17	11
Depth @ MLLW							
Visibility	20	20	201				
		Substra	ate				
Boulder (%)							
Cobble (%)	40	40					
Gravel (%)					25	10	10
Sand (%)	60	(20	100		75	90	90
Mud(%)							
		Eelgras	ss/0.25 r	n2			
2 o'clock	0	2	0		0	. 0	0
6 o'clock	7	25	7		6	0	0
10 o'clock	1	0	120	- 100 E	0	0	6
	·	Macro		ercent (Cover/0.2	25 m2	
2 o'clock	SO	60			0	0	0
6 o'clock	16	10	0	د	50	10	10
10 o'clock	60	(00	5		75	20	75
Dominant Algal	Uh	ulva	EE) 6.		1	. 30	
Species:	Ulva	Viin	1)12		Ulva	Ulva	Ulva
		0.000					
	<u> </u>	Inverte	brates	L		<u> </u>	
Goeduck			ŀ				
Dungeness							
<u> </u>							
Starfish							
			-				
Fish						dabs	
Other						*	
		-	 				
				 	•	1	<u> </u>

chevron Dock King County Eelgrass Survey Data Form

8/18/03

8/18/03								
Date: 5	outh	7	Transe	ct#	No	North		
	· ·	Transec	ct Stops	U	20	30	80	
	20	30	2 0)	-58.	-80	1,05	
Time:	815	810	825		827	830	830	
Depth:	12	12	12	,	13	15	12	
Depth @ MLLW					~		ý.	
Visibility								
		Substra	ite					
Boulder (%)								
Cobble (%)								
Gravel (%)								
Sand (%)	100	100	100		100	100	100	
Mud(%)			1		-			
		Eelgras	s/0.25 r	n2				
2 o'clock	13	9	U		6	19		
6 o'clock	14	20	0		23	23	15	
10 o'elock	1%	26	0		8	22	15	
		Macro A	Algae Po	ercent C	Cover/0.2	5 m2		
2 o'clock	30	20	5		10	15	20	
6 o'clock	40	25	0		25	10	10	
10 o'clock	40	25	0		15	25	15	
Dominant Algal					, my s.			
Species:	UNO	Ulva	ul va		4/19	Uleu	lula	
					Sun A		·	
		Inverteb	orates					
Goeduck								
Dungeness								
Starfish								
		_ /						
Fish		Verd				·		
	Ĭ.	1						
Other								
	V 1.2.2							

Chevron dock King County Eelgrass Survey Data Form

8/18/03	- Nili	g County E	algrass Sur	N L	-om	-	v
Date:	$-\Lambda$	orth	Transe	ct	5	outh	
	- V V		ct Stops		20	30	22
	2.0	30	£ 0	339	-	250	133
Time:	341	943	34)		848	851	855
Depth:	19	19	19		16	15	12
Depth @ MLLW		t 1	` '		1,00		
Visibility							
		Substra	ite				
Boulder (%)							
Cobble (%)							
Gravel (%)			10				
Sand (%)	,00	100	90		100	120	100
Mud(%)	<u> L</u>				(,	
	·	Eelgras	s/0.25 r	n2			
2 o'clock	0	0	0		6	16	17
6 o'clock	3	0	4		0	12	16
10 o'clock	0	Q_	10		18	21	16
			Algae Pe	ercent (Cover/0.2	5 m2	
2 o'clock	<u>U</u>	<u> </u>	0		0	10	30
6 o'clock	10	_0	5		9	18	40
10 o'clock	5	2	10		20	10	25
Dominant Algal							
Species:			Ulvo	,	ulu) 	ulva
			Sacto			,	
	1 1	Inverteb	rates	-	7		
Goeduck							
Dungeness							
Otaufiala	<u> </u>				-		
Starfish							
Fieb							
Fish				Sand	Kauch		Pero
Othor					1200		
Other					+ alabo	3	
			-				
<u> </u>			<u> </u>		Ì		
	<u> </u>						

	cl	hevro	n Doc	ck		T		340	
	King	g County E	elgrass Surv	ey Data F	Form	I	•		
8/18/03	1/	1							
Date:	Nor	Th	Transec	et#		outh	·		
		Transe	ct Stops	j	20	30	80		
	20	30	2 0	30	-55	-80	165		
Time:				17	920	921	925		
Depth:					20	30 ′	16		
Depth @ MLLW									
Visibility									
-		Substra	ate						
Boulder (%)									
Cobble (%)									
Gravel (%)							10		
Sand (%)	100	100	100		100	100	900		
Mud(%)					1	100			
		Eelgras	s/0.25 m	12		<u> </u>	<u> </u>		
2 o'clock		0	0		0	3	15		
6 o'clock	0	A	0		0	0	19		
10 o'clock	()	(a)	0		5	U	/2		
	december de la comp	Macro	Algae Pe	rcent (Cover(0.2	25 m ²		-	
2 o'clock					10	.5	18		,
6 o'clock					0	0	20		
10 o'clock					5	10	20		
Dominant Algal					*				
Species:					Ulva	11/19	Ulua		
				,			1am		
		Invertel	orates			 	<i>y</i>		
Goeduck									
,						-	,	٠	
Dungeness									
						,	Shrimi	9	
Starfish							/		
								ı	
Fish								ı	
							Perds	101	
Other		·			1	-	Race	6 Sole	2
				*				: •	
					1				
L					_ 	<u> </u>			

Chevron Dock King County Eelgrass Survey Data Form

	Kind	へといい County E	o n ロ じ o elgrass Sur	O <i>CI</i> C vev Data F	orm		-
8/18/03		<i>y</i>	o.g. 400 04.	vo, bala i	J	2	
Date:)\	orth	Transe	ct#		outi	
	17		ct Stops		2.2	30	80
	20	30	3 0	-40	毒	₩.	405
Time:				V	920	931	933
Depth:	deepe	r Mau	25	1	28	25	20
Depth @ MLLW						-	
Visibility							
	,	Substra	te	_			
Boulder (%)							
Cobble (%)							
Gravel (%)							
Sand (%)	100	100	100		100	100	100
Mud(%)					Ì		
	- /3 -	Eelgras	s/0.25 r	n2			
2 o'clock	<i>Q</i>	<u> </u>	(2)		(0)	<u> </u>	7
6 o'clock	0		<u> </u>		0	0	15
10 o'clock	$ \mathcal{O} $	$\overline{\cdot \cdot \cdot}$			0	0_	15
0 -1-11	I - I	Macro A	Algae Pe	ercent C	Cover/0.2	25 m2	
2 o'clock	<i>.</i>				13		5
6 o'clock							10
10 o'clock							10
Dominant Algal Species:		· · · · · · · · · · · · · · · · · · ·			<u> </u>		
Species.							
		Inverteb	ratos		L		
Goeduck		<u> </u>	nates		·		6
,							0
Dungeness							0
2 dingonoco)ee(
Starfish							47
-							0
Fish							,
							0
Other							6
	-						8
					·		(0)

Chewon Dock King County Eelgrass Survey Data Form

T320

Date: \$//8	103		Transect # / >6)		20	
0/16/		Transect			370	3
	165	20	30	-	80	105
Time:					aun	100
Depth					77	
Depth @ MLLW				·		
Visibility						
Substrate						
Boulder (%)						
Cobble (%)						
Gravel (%)						
Sand (%)		100	100		100	
Mud(%)		1	,	·	,	
Eelgrass/0.25 m2						
2 o'clock		0				
6 o'clock		0	(1)		0	
10 o'clock		0			1	
·	Macro Ale	gae Perc	ent Cover	/0.25 m2		
2 o'clock		0	0		0	
6 o'clock		0	. 0		0	
10 o'clock	·	0	0	,	0	
Dominant Algal						
Species:				,		
						,
Invertebrates						
Goeduck						
Dungeness					·	
Starfish						
Fish						
					·	
Other						
,						
					·	